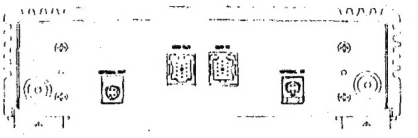
PIONEER
The Art of Entertainment

Service Manual



UNIVERSAL DIGITAL PREAMP/EQUALIZER
OPTICAL DIGITAL REFERENCE SYSTEM

RS-P50 UC,EW

CONTENTS

SAFETY INFORMATION (UC MODEL)

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

PIONEER ELECTRONIC CORPORATION 4-1,Meguro 1-Chome,Meguro-ku, Tokyo 153,Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760,Long Beach,California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham,Ontario L3R 0P2 Canada
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FK OCT. 1993 Printed in Japan

1. SPECIFICATIONS

GENERAL

Power Source .....DC 14.4V(10.8—15.6V allowable)
Grounding system .....Negative type
Current consumption .....1A(without center speaker)
.....2.5A(rated power of center speaker)
Fuse 4A
Dimensions .....202(W)×56(H)×260(D)mm
..... [8(W)×2-1/4(H)×10-1/4(D)in.]
Weight .....2.8kg(6.2lbs.)

DSP/PREAMP

Tone controls(parametric)
Bass frequency 63Hz,100Hz,160Hz,250Hz
Treble frequency.....4kHz,6.3kHz,10kHz,16kHz
Level .....±12dB
16-band graphic equalizer(front/rear)
Frequency .....20Hz—20kHz,2/3oct.
Level .....±12dB
Network
SUBWOOFER
.....HPF frequency:20Hz—100Hz,1/3oct.
LPF frequency:25Hz—250Hz,1/3oct.
Level:+10dB—24dB(0.5dB)
LOW.....HPF frequency:25Hz—250Hz,1/3oct.
LPF frequency:250Hz—10kHz,1/3oct.
Level:0dB—24dB(0.5dB)
MID .....HPF frequency:200Hz—10kHz,1/3oct.
LPF frequency:2kHz—20kHz,1/3oct.
Level:0dB—24dB(0.5dB)
HIGH.....HPF frequency:1.6kHz—20kHz,1/3oct.
LPF frequency:8kHz—20kHz,1/3oct.
Level:0dB—24dB(0.5dB)
Slope .....PASS,-6,-12,-18,-24,-30,-36dB/oct.
(HPF of MID and HIGH dosen't have PASS mode)
Phase .....NORMAL/REVERSE
Time alignment .....0—10msec.
NAC(Natural Acoustic Control)
Early reflection .....Initial delay:2—22msec.
Liveness:±10 step
Room size:±10 step
Level:-20—+5dB
HF reflection:±2 step
Reverberation .....Initial delay:30—120msec.
Level:-20—+10dB
Reverberation time:400—3,150msec.
HF reverberation:±2 step
Reverberation fader:0—10dB

Center speaker network
HPF frequency:100Hz10kHz,1/3oct.
Slope:-12dB/oct.
LPF frequency:630Hz—PASS,1/3oct.
Slope:-6dB/oct. or PASS
Level:0—24dB(0.5dB)
Time:0—10msec.
Position adjustment.....Time:0—10msec.
Level:0—30dB
Sampling frequency 44.1kHz
Digital input.....Optical input
Digital output .....Optical output

RCA OUTPUT(2V output,15kΩ terminate)

Frequency response .....10Hz—20kHz(+0,-1dB)
Max. output level/impedance 2V/1kΩ
Distortion.....0.005%(1kHz,20kHz LPF)
Signal-to-noise ratio(UC) .....100dB(IHF-A network)
Signal-to-noise ratio(EW) .....100dB(IEC-A network)
Separation.....75dB(100Hz—10kHz,20kHz LPF)

POWER AMPLIFIER

Maximum power output 30W
Continuous power output(UC)
15W(20Hz—20kHz,1%,4Ω)
Continuous power output(EW)
EIA power .....15W(20Hz—20kHz,1%,4Ω)
DIN power.....22W(DIN45324,+B=14.4V)
Load impedance.....4Ω(4—8Ω allowable)

These specifications were determined and presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

The specifications and design are subject to change without prior notice.
Products purchased may differ from illustrations of this manual.

Service Manual

PIONEER®
The Art of Entertainment

ORDER NO.
CRT1788

UNIVERSAL DIGITAL PREAMP/EQUALIZER OPTICAL DIGITAL REFERENCE SYSTEM

RS-P50 EW8

● **As to RS-P50/EW8 , refer to CRT1544 (RS-P50/EW) because of the same contents.**

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K-ZZU. SEPT. 1995 Printed in Japan

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2. DISASSEMBLY

●Heat Sink

1.Remove the six screws.
2.Remove the heat sink.

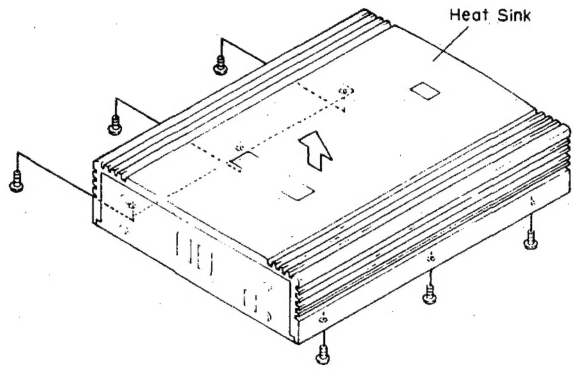


Fig.1

●Panel

1.Remove the eight screws.
2.Remove the two panels.

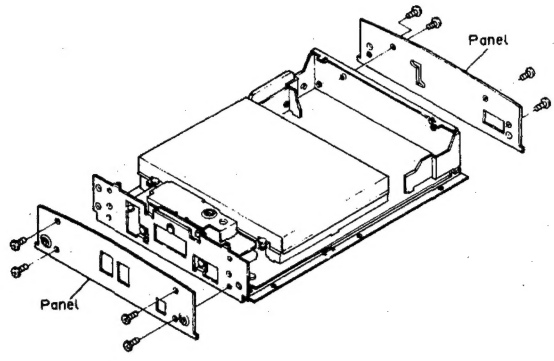


Fig.2

●Chassis

1.Remove the five screws.
2.Unbend the claws at three locations until straight.
3.Remove the chassis.

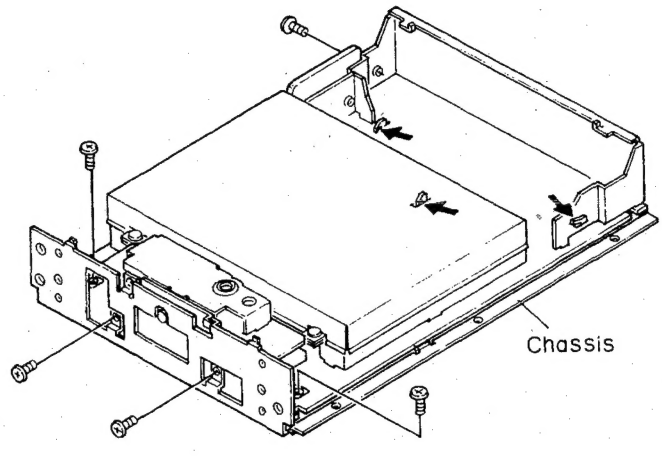


Fig.3

●Switch P.C.Board

1.Remove the connector.
2.Remove the screw.
3.Unbend the claws at three locations until straight.
4.Remove the switch P.C.Board.

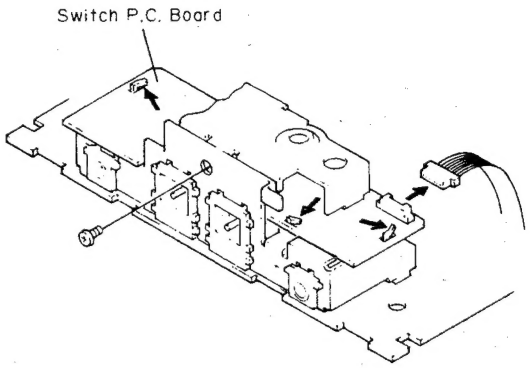


Fig.4

●DSP Unit

1.Remove the four connectors.
2.Remove the four screws.
3.Remove the DSP unit.

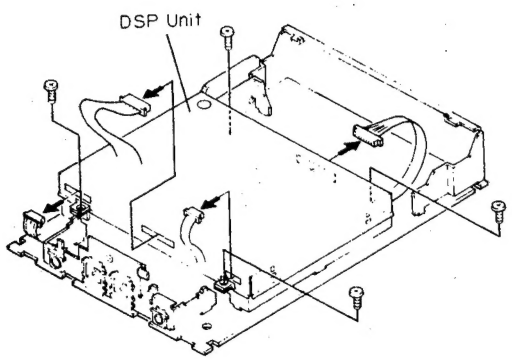


Fig.5

●Shield

1.Remove the case.
2.Unbend the claws at five locations until straight.
3.Remove the shield.

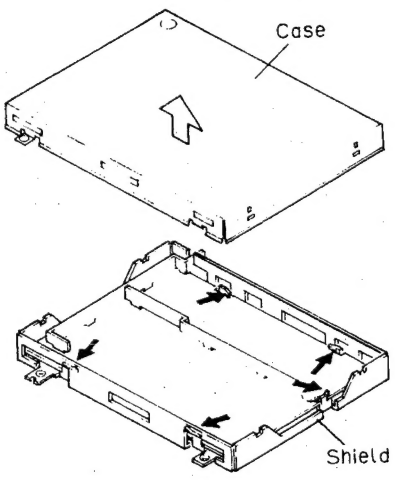


Fig.6

3. CIRCUIT DESCRIPTION

●System Initialization

The process for system initialization is as follows:

1. VDD 5 V is fed into the IC601 microcomputer.
2. BSENS and ASENSB pins are set L.
3. ROPW pin is set H and the ROMPOW 5 V is fed to the external ROM IC602.
4. The communication between the IC601 microcomputer and the external ROM IC602 begins.
5. Unless any error occurs in the communication between the microcomputer and the external ROM, IPPW pin is set H.
6. IP 5 V is fed into the IP-BUS circuit.
7. SYSPW is set H and the system is initialized.

●Memory Protection Circuit

When BACK UP is removed, Q954 is turned OFF and BSENS pin is set H. This makes the IC601 microcomputer find that BACK UP is removed. Then, oscillation of the microcomputer is stopped and the microcomputer enters the stop mode.

During the stop mode, current consumption is decreased.

In this state, the memory is protected by keeping VDD by means of C951. This memory protection circuit protects the memory contents for 3 or 4 days in the case where the car is inspected or the battery is replaced.

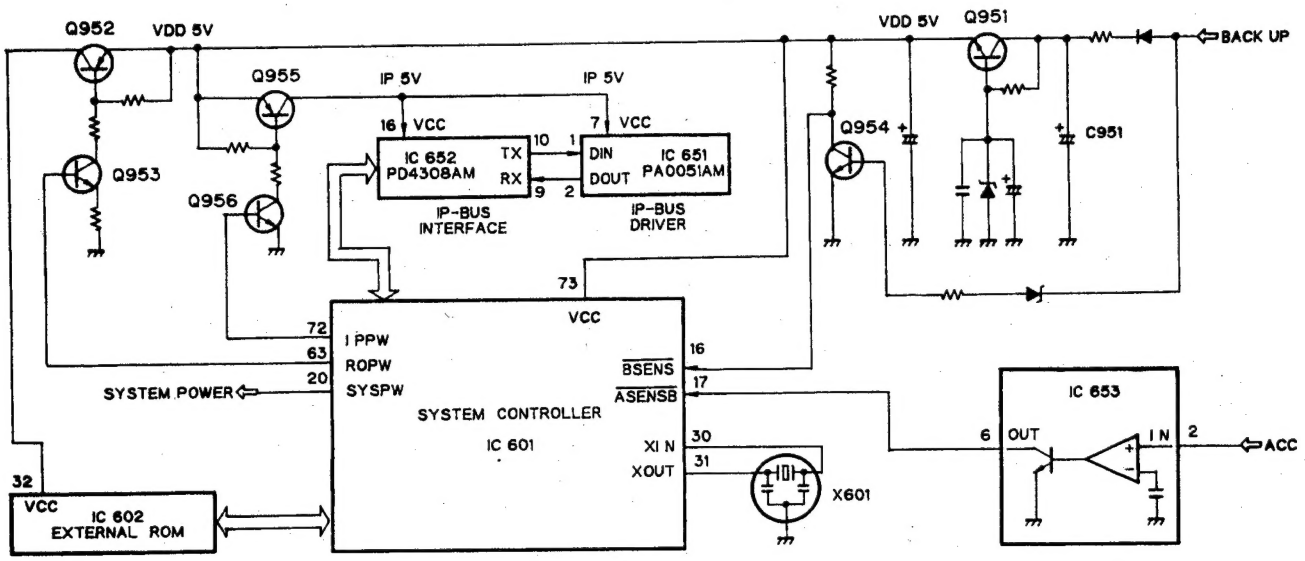


Fig.7

●Jitterless PLL

In generally used analog systems, it is impossible to prevent noise completely because a large amount of noise is generated from the vehicle. Therefore, an optical digital transmission system is adopted. This system is able to shut off electrical noise and does not have analog circuits that would be the cause of degradation of sound quality.

However, the optical fiber cable is not resistant to bending and the like, and thus jitters (irregular movement of clock pulses) are produced when the cable is installed in the interior of the vehicle. Because the jitter results in degradation of the sound quality, a jitterless PLL circuit that prevents jitters is needed.

The jitterless PLL circuit consists of the waveform shaping circuit (WF) and two systems of PLL circuits (see the figure).

① The data input from the receptacle involves slight jitters and irregular waveforms as a result of the way of installing the optical cable.

② The irregularity included in the input data is rectified by making the input signals pass through the waveform shaping circuit.

③ The waveform shaped data is input into DIR (IC601) and combined with one-sixth (64 fs) of the internal VCO (384 fs) to form PLL1. As a result, the internal VCO is PLL-locked to the input signal by 384 times as large as the input data (fs = 44, 1 kHz).

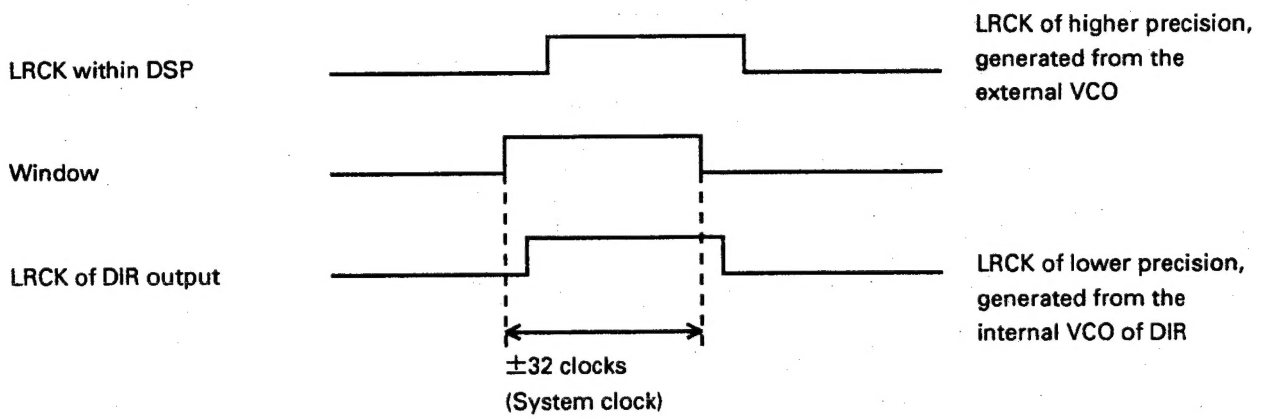
Then, the output (384 fs) of the internal VCO is input into the DIR section to generate LRCK (fs) and BCK (64fs).

Should this internal VCO output be used as MCK (master clock) for DAC, the stability (precision) would be insufficient. Thus, the output is further combined with another external VCO (an oscillating device having the stability (precision) equivalent to a crystal oscillator) in order to form a loop of PLL2. The objective of the PLL2 is to get the master clock of higher precision as input into the DAC,so that the DAC can operate, giving its full capability.

④ A loop of PLL2 is formed by comparing the BCK (64 fs) generated from the internal VCO (384 fs) with one-sixth of the external VCO. Sound quality is enhanced by using the output of PLL2 as master clock for DAC and DSP.

⑤ Since the LRCK and BCK which are outputs of DIR are generated from the internal VCO of DIR by means of dividing, use of them as they are brings on inadequate performance. In order to prevent this obstruction, the IC of DSP has a built-in feature called "jitter-free".

<Jitter-free feature>



If there are some jitters in external (input) LRCK, pulses can be output at the timing of LRCK of higher precision within DSP as long as they are inside the Window, and thus jitters will vanish.

In DSP and subsequent sections, jitter-free LRCK having higher precision, generated from the external VCO, is used.

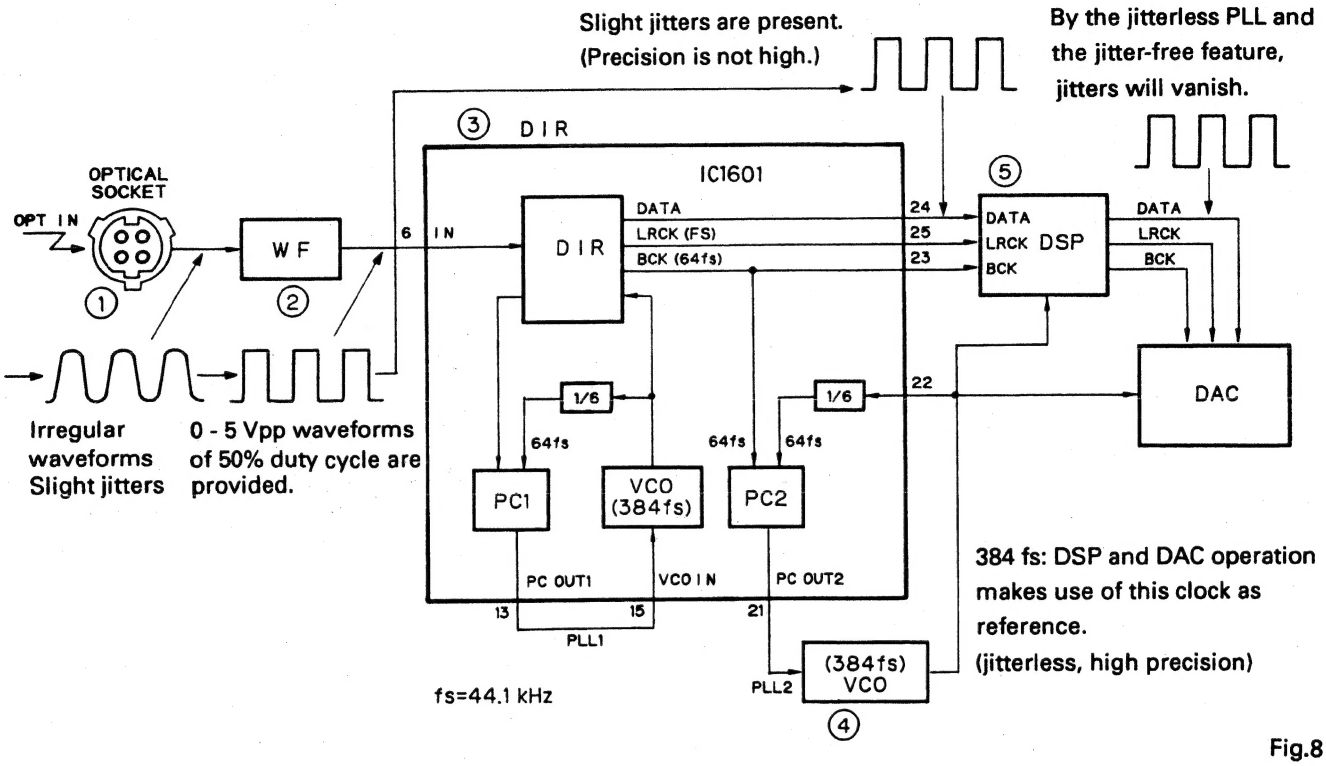


Fig.8

●DSP System Diagram

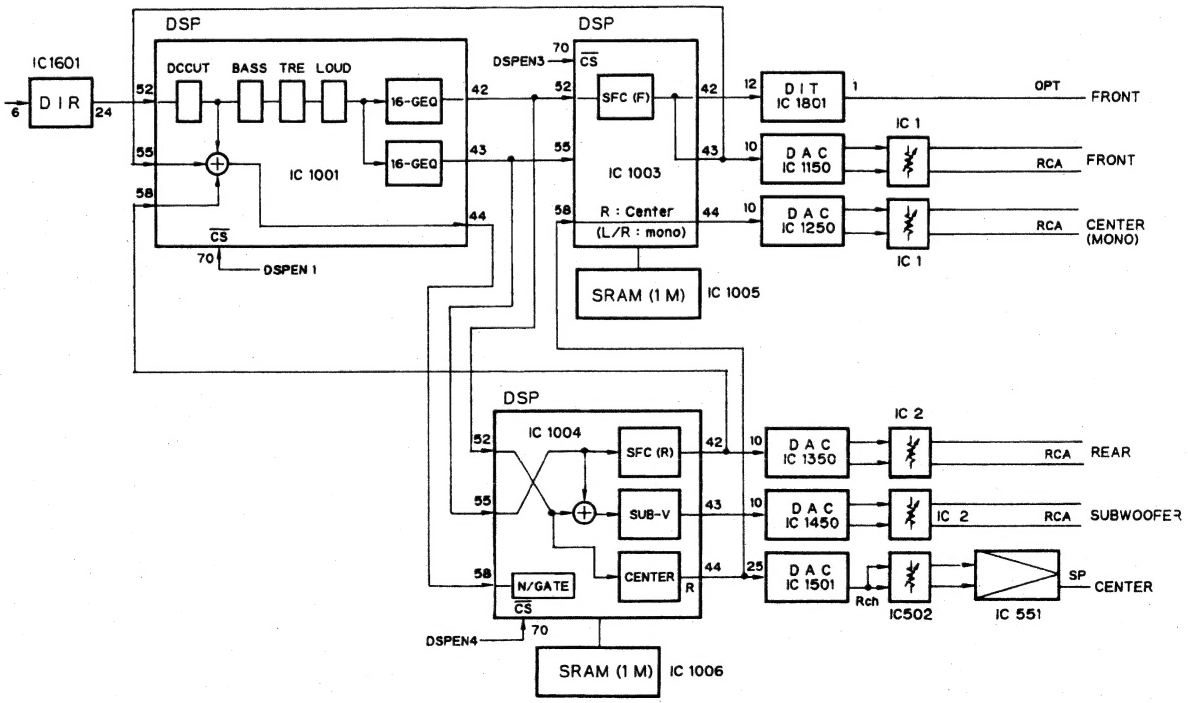
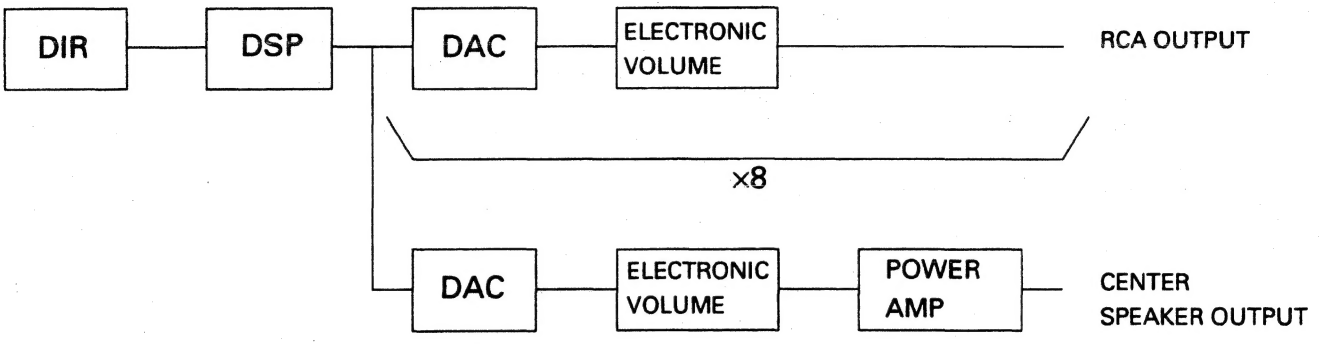


Fig.9

●Analog Output Circuit

RS-P50 contains 9-channel DAC (8 channels for RCA output and one channel center SP) and an electronic variable resistor in order to make connection to the existing analog amp.

In DSP, as shown in the figure, digital data input from DIR undergoes signal processing such as NAC (Natural Acoustic Control), 16-band GEQ, etc. The processed digital data is input into DAC and converted into analog signals. Then, the signals can be controlled by the electronic variable resistor. 1-bit DAC that is subject to less zero-cross distortion is used.



●Clock System Diagram

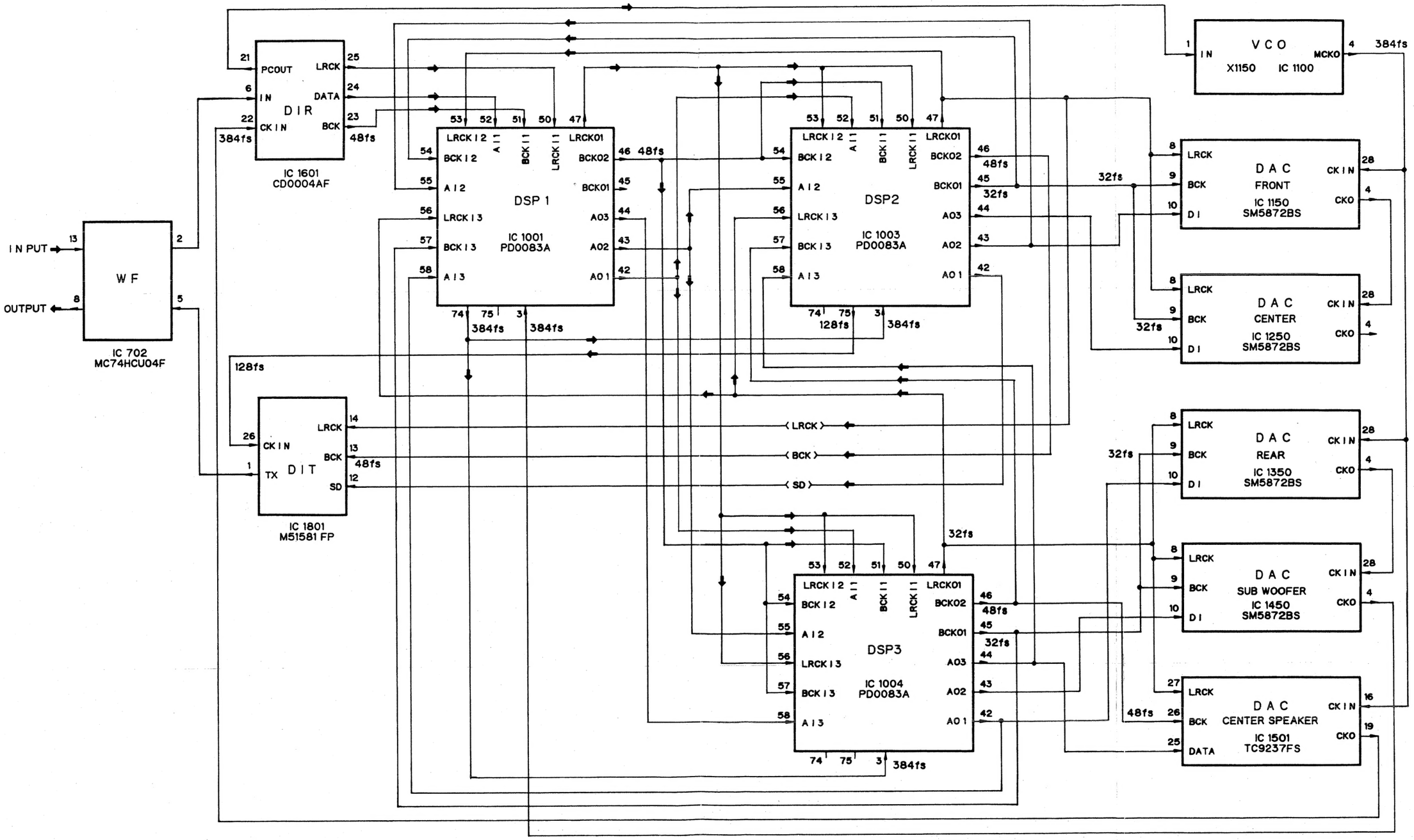


Fig.10

●Block Diagram

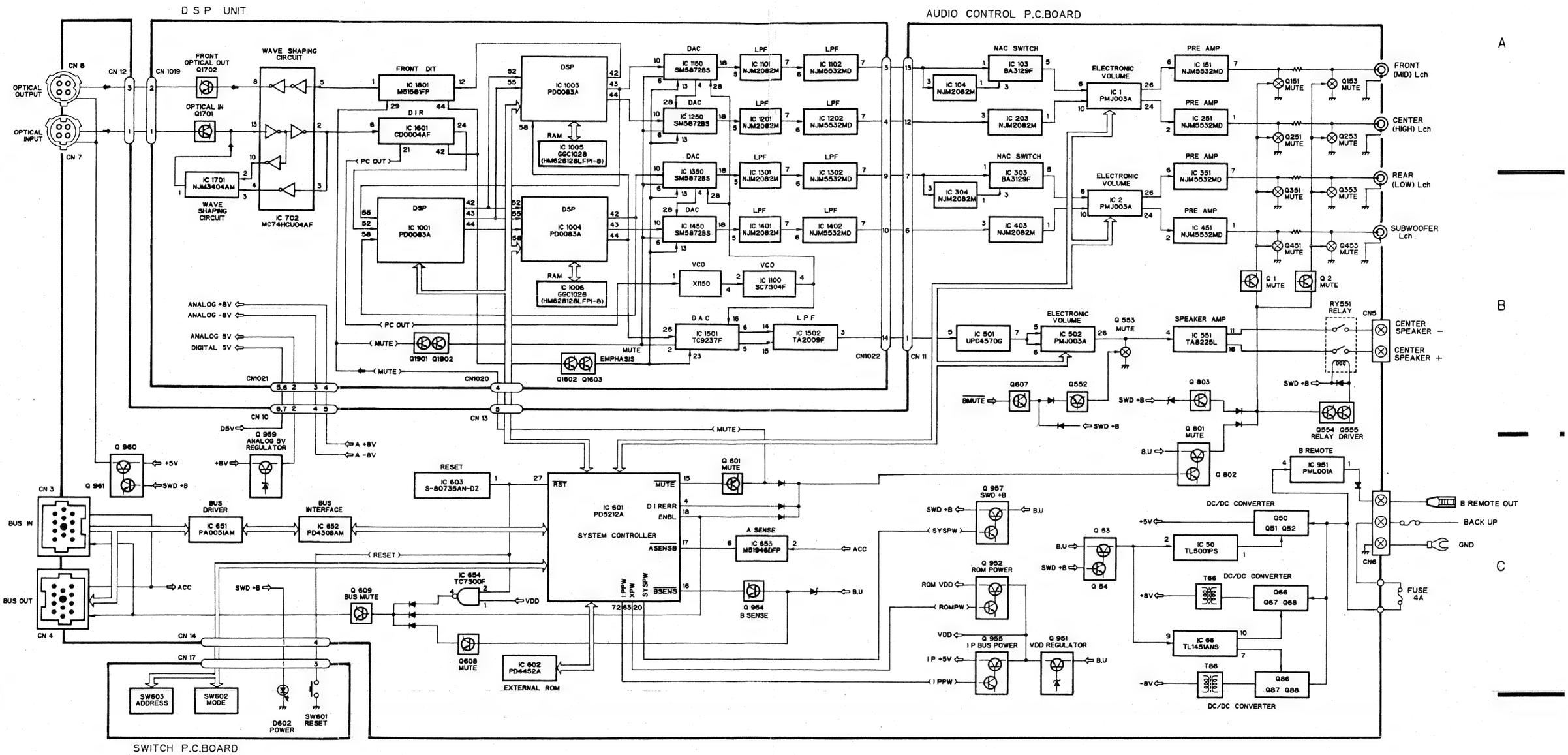
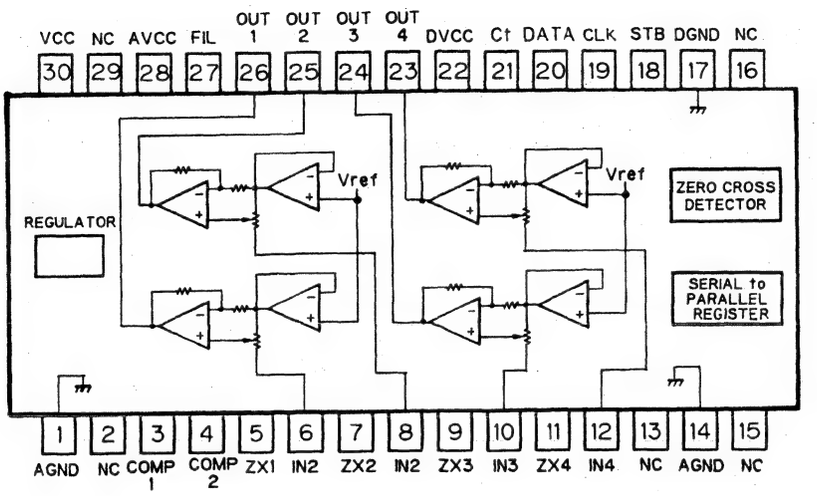


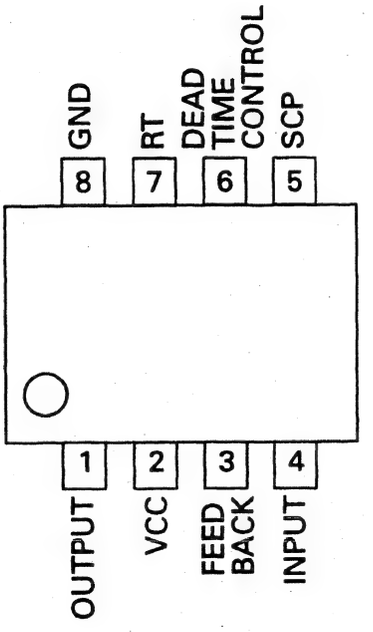
Fig.11

●ICs
●Audio Control Unit

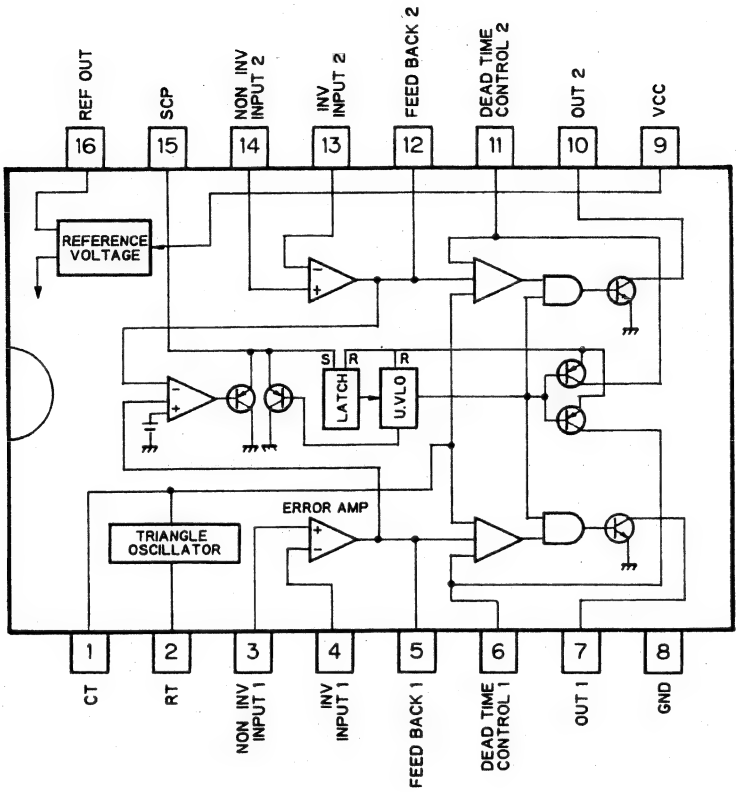
IC1,2,502:PMJ003A



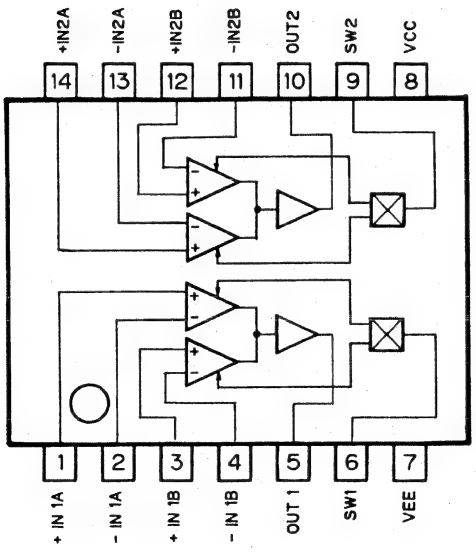
IC50:TL5001PS



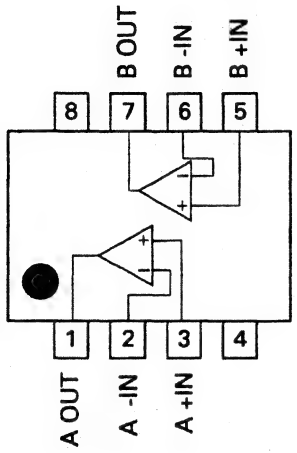
IC66:TL1451ANS



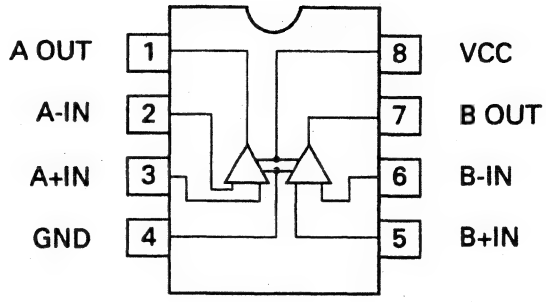
IC103,303:BA3129F



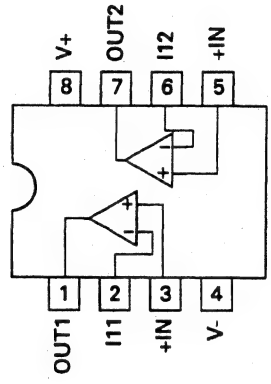
IC104,203,304,403:NJM2082M
DSP Unit
IC1101,1201,1301,1401:NJM2082M



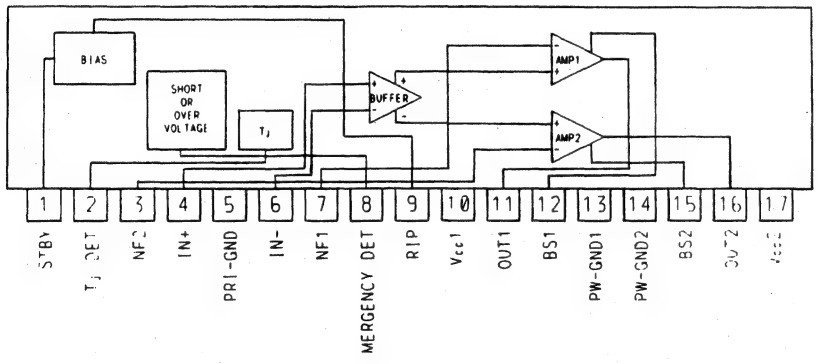
IC151,251,351,451:NJM5532MD
DSP Unit
IC1102,1202,1302,1402:NJM5532MD



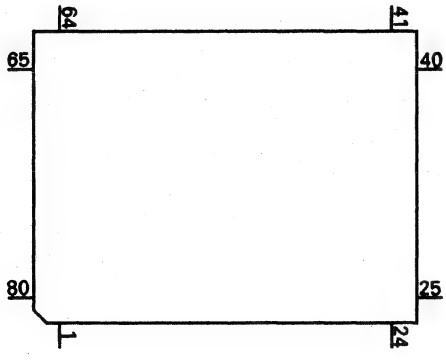
IC501:UPC4570G



IC551:TA8225L



*IC601:PD5212A



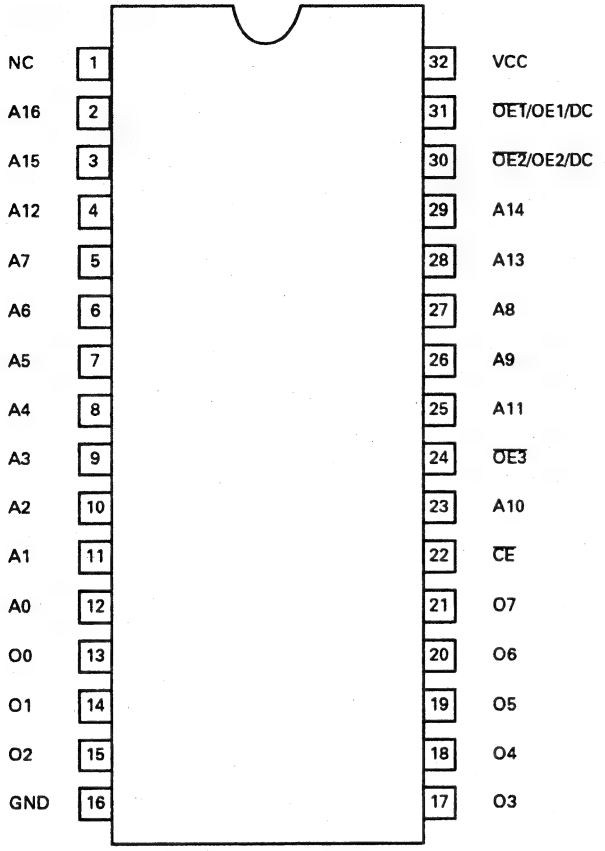
IC's marked by are MOS type.*
Be careful in handing them because they are very liable to be damaged by electrostatic induction.

●**Pin Functions(PD5212A)**

Pin	Pin Name	I/O	Output Format	Function
1	$\overline{\text{DSPEN3}}$	O	C	DSP enable
2	NC			Not used
3	$\overline{\text{DSPEN1}}$	O	C	DSP enable
4	DIRERR	I	C	DIR error detector
5	DIRDA	I	C	Audio/Digital switch
6	DIRFS	I	C	Frequency select terminal bit
7	TESTIN	I		Test program mode input
8	$\overline{\text{DSPRDY}}$	I	C	Microcomputer I/F reception enable input
9	$\overline{\text{IPSCK}}$	O	N	IP-BUS serial clock
10	IPOUT	O	N	IP-BUS serial data output
11	IPIN	I	C	IP-BUS serial data input
12	$\overline{\text{DSPRST}}$	O	C	DSP reset control
13	DSPAD	O	C	DSP data/address switch
14	XA16	O	C	External ROM address output
15	$\overline{\text{MUTE}}$	O	C	System mute
16	$\overline{\text{BSENS}}$	I		Back up power sense input
17	$\overline{\text{ASENSB}}$	I	C	Acc sense input
18	ENBL	I		Test program enable input
19	HPFP	O	C	High pass filter for switch ON/OFF
20	SYSPW	O	C	System power supply control output
21	DSPCK	O	C	DSP serial clock output
22	DSPOUT	O	C	DSP serial data output
23	DSPIN	I	C	DSP serial data input
24	XA15	O	C	External ROM address output
25	IPIRQ	I		Interrupt input from IP BUS interface IC
26	CNVSS	I		GND
27	$\overline{\text{RST}}$	I		Reset signal input terminal
28	SWST	O	C	Switch strobe
29	VCK3	O	C	Clock output of electronic volume 3
30	XIN	I		Crystal oscillating element connection pin
31	XOUT	O		Crystal oscillating element connection pin
32	VSS			GND
33-40	XDT7-0	I	C	External ROM data input
41	$\overline{\text{XCE}}$	O	C	Chip enable output for external IC
42-56	XA14-0	O	C	External ROM address output
57	$\overline{\text{XRD}}$	O	C	External ROM read signal output
58-61	NC			Not used
62	$\overline{\text{ONW}}$	I	C	Read cycle extension signal input
63	XPW	O	C	External ROM power
64	VCK2	O	C	Clock output electronic volume 2
65	VCK1	O	C	Clock output for electronic volume
66	VST	O	C	Strobe pulse output for electronic volume
67	VDT	O	C	Data output for electronic volume
68	IPCD	O	C	Command/data output for IP BUS interface IC
69	IPRW	O	C	Read / write output for IP BUS interface IC
70	$\overline{\text{IPCS}}$	O	C	Chip select output for IP BUS interface IC
71	$\overline{\text{IPRST}}$	O	C	Reset output for IP BUS interface IC
72	IPPW	O	C	Power supply control output for IP BUS interface IC
73	VCC			5V
74	VREF	O	C	0V
75	AVSS			GND
76-79	SWDT3-0	I	C	Switch data input
80	$\overline{\text{DSPEN4}}$	O	C	DSP enable

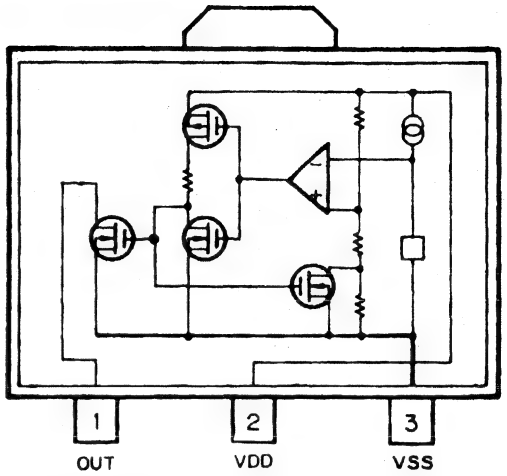
Output Format	Meaning
C	CMOS
N	N channel open drain

*IC602:PD4452A

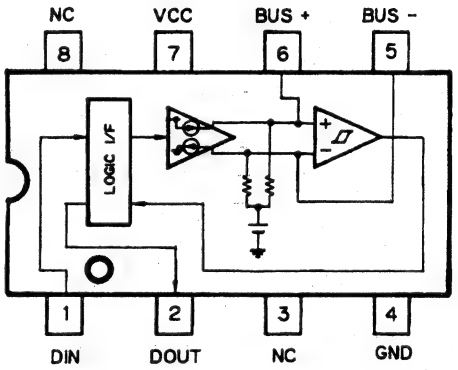


A0-A16 : Address
CE : Chip enable
OE1-OE3 : Output enable
O0-O7 : Output
DC : Don't care
NC : No connection

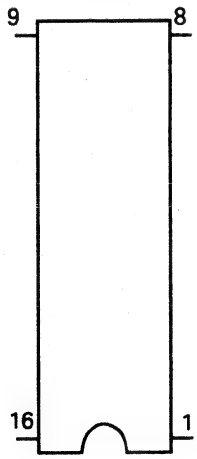
*IC603:S-80735AN-DZ



IC651:PA0051AM



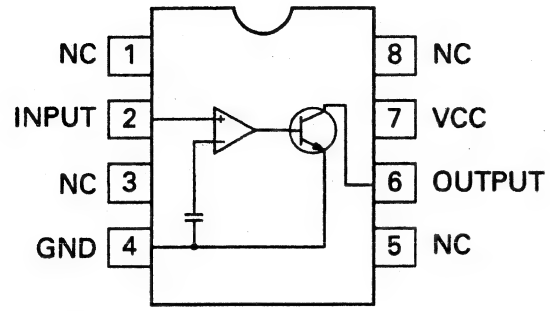
IC652:PD4308AM



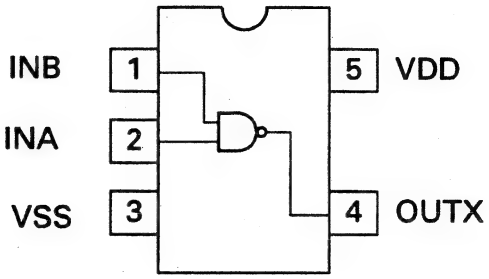
●Pin Functions(PD4308AM)

Pin	Pin Name	I/O	Function and Operation
1	IPSCK	I/O	Clock input/output
2	IPSI	I	Data input
3	IPSO	O	Data output
4	IPIRQ	I	Interrupt input
5	IPRW	O	Read / write output
6	X1		Crystal oscillator connection pin
7	X0		Crystal oscillator connection pin
8	GND		GND
9	RX	I	Data input
10	TX	O	Data output
11	NC		Not used
12	IPCD	O	Command/data output
13	IPCS	O	Chip select output
14	IPRST	O	Reset output
15,16	VDD		Power supply

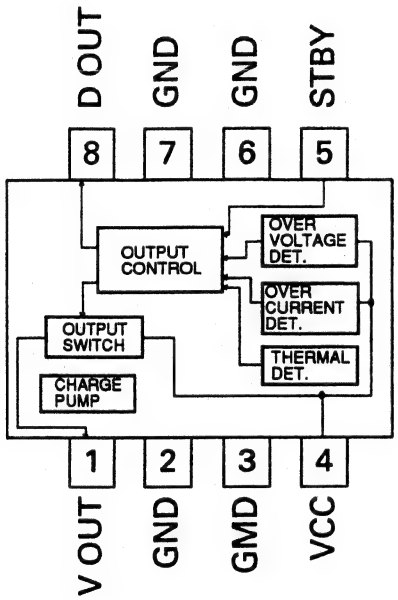
IC653:M51946BFP



*IC654:TC7S00F

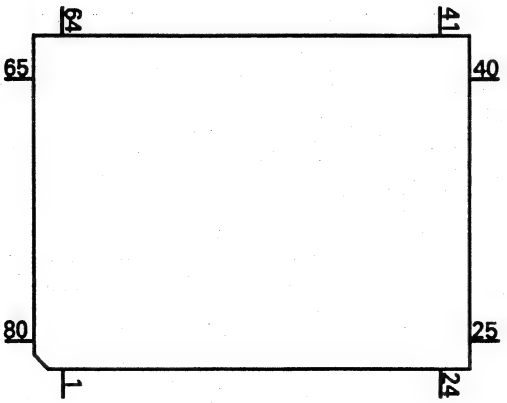


IC951:PML001A



●DSP Unit

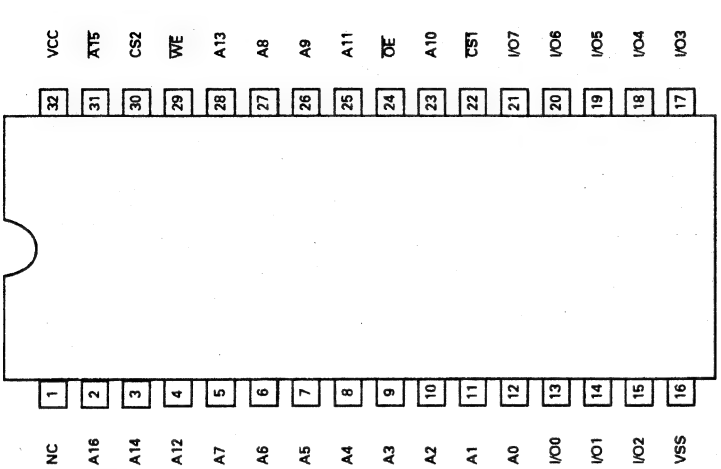
*IC1001,1003,1004:PD0083A



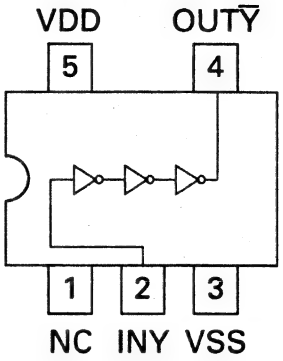
●**Pin Functions(PD0083A)**

Pin	Pin Name	I/O	Function
1	XIN	I	Crystal oscillating element connection pin
2	XOUT	O	Crystal oscillating element connection pin
3	EXCK	I	External clock input
4	VDD1		Power supply
5	$\overline{WE0}$	O	Write enable pin of external RAM
6	$\overline{OE0}$	O	Output enable pin of external RAM
7	$\overline{WE1}$	O	Write enable pin of external RAM
8	$\overline{OE1}$	O	Output enable pin of external RAM
9	CE	O	Chip enable pin of external RAM
10	$\overline{CE}$	O	Chip enable pin of external RAM
11-18	RAMIO0-7	I/O	Data input output pin of external RAM
19	VSS1		GND
20-25	A16-11	O	Address output pin of external RAM
26	VDD2		Power supply
27-37	A10-0	O	Address output pin external RAM
38-41	TP1-4	I	Test mode input pin
42-44	AOUT1-3	O	Lch,Rch audio serial data output pin
45	BCKOUT1	O	Bit clock of 32fs output pin
46	BCKOUT2	O	Bit clock of 48fs output pin
47	LRCKOUT1	O	LR clock output pin
48	LRCKOUT2	O	LR clock output pin
49	VSS2		GND
50	LRCKIN1	I	LR clock input pin1
51	BCKIN1	I	Bit clock input pin1
52	AIN1	I	Lch,Rch audio serial data input pin1
53	LRCKIN2	I	LR clock input pin2
54	BCKIN2	I	Bit clock input pin
55	AIN2	I	Lch,Rch audio serial data input pin2
56	LRCKIN3	I	LR clock input pin3
57	BCKIN3	I	Bit clock input pin3
58	AIN3	I	Lch,Rch audio serial data input pin3
59	VSS3		GND
60-64	TESTO0-4	O	Test output pin
65	$\overline{DRDY}$	O	Microcomputer I/F reception enable output pin
66	TDATA	O	Microcomputer I/F transmission data output pin
67	RDATA	I	Microcomputer I/F reception data input pin
68	$\overline{SCK}$	I	Clock input terminal serial data input
69	$\overline{A/D}$	I	Address data discrimination input pin
70	$\overline{CS}$	I	External RAM chip select
71	$\overline{RESET}$	I	Reset input
72	XSEL	I	Frequency/external switch pin
73	VDD3		Power supply
74	384FS	O	Master clock output pin
75	128FS	O	128fs clock output pin for A/D converter
76	64FS	O	64fs clock output pin for A/D converter
77	32FS	O	32fs clock output pin for A/D converter
78	2FS	O	2fs clock output pin for A/D converter
79	FS	O	Fs clock output pin A/D converter
80	VSS4		GND

IC1005,1006:GGC1028(HM628128LFPI-8)



*IC1100:SC7S04F

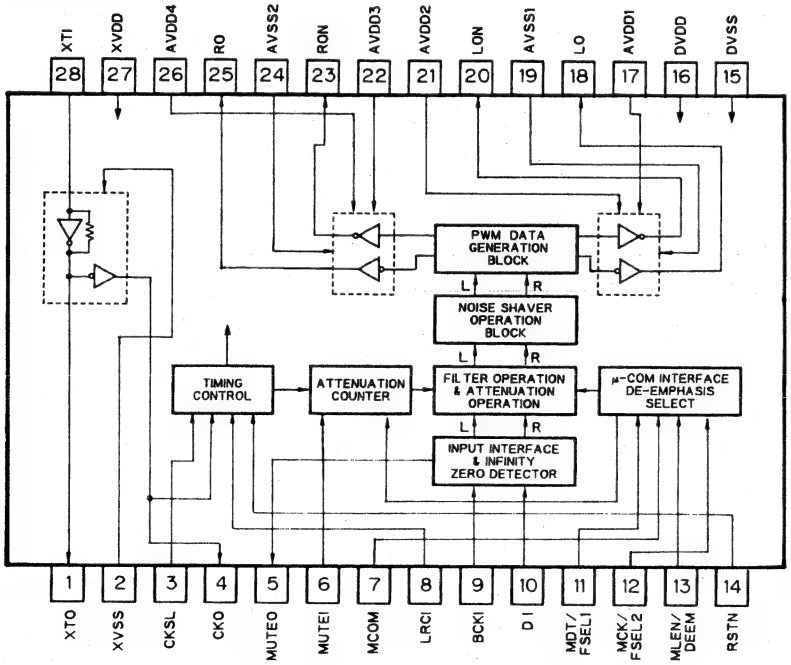


●**Functions(GGC1028)**

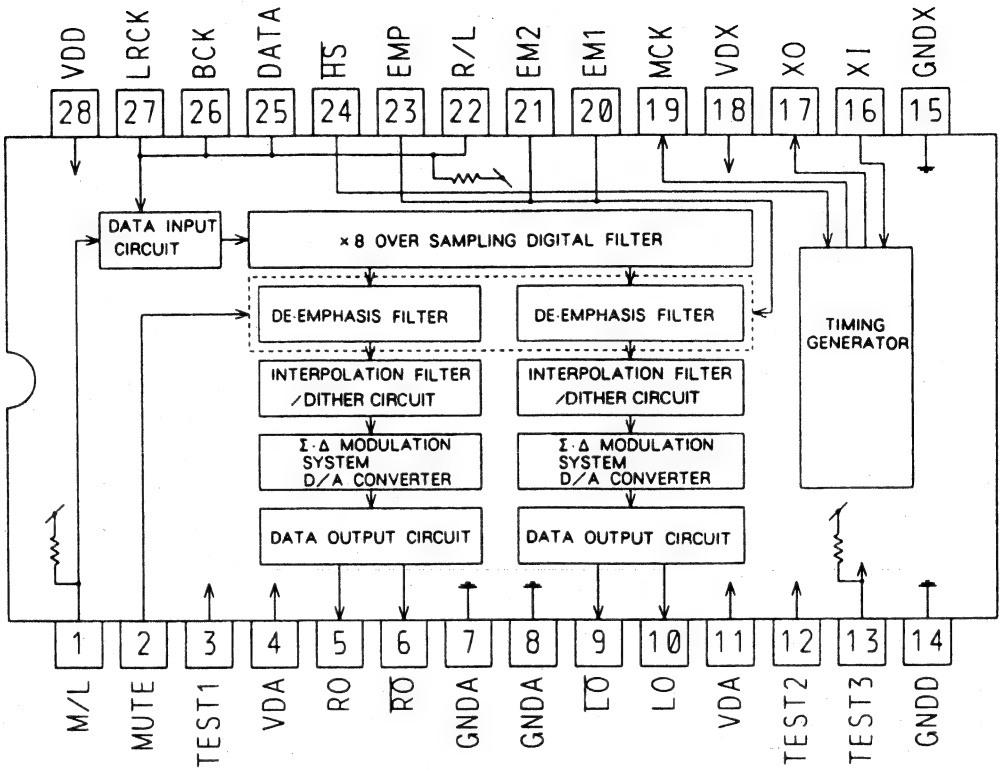
$\overline{CS1}$	CS2	$\overline{OE}$	$\overline{WE}$	Mode	I/O	Note
H	*	*	*	Not select	High-z	
*	L	*	*	Not select	High-z	
L	H	H	H	Read	High-z	Output disable
L	H	L	H	Read	Dout	Read Cycle1-3
L	H	H	L	Write	Din	Write Cycle1
L	H	L	L	Write	Din	Write Cycle2

*:H or L

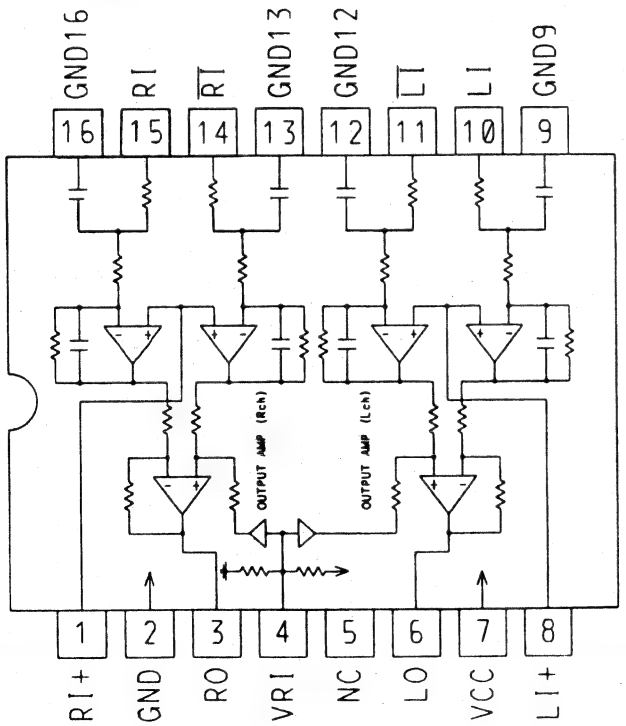
*IC1150,1250,1350,1450:SM5872BS



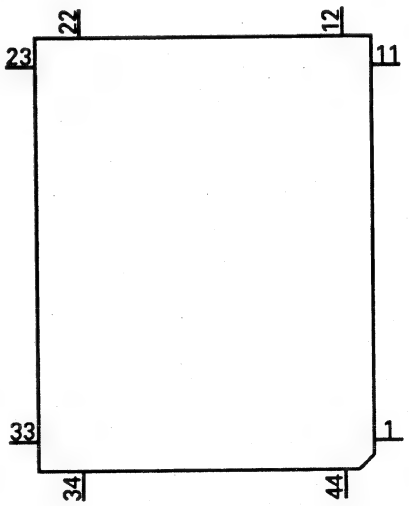
IC1501:TC9237F



IC1502:TA2009F



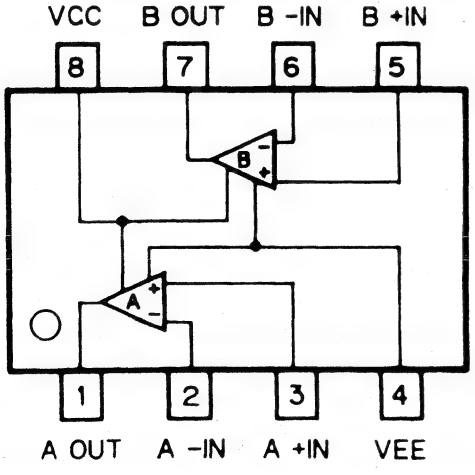
*IC1601:CD0004AF



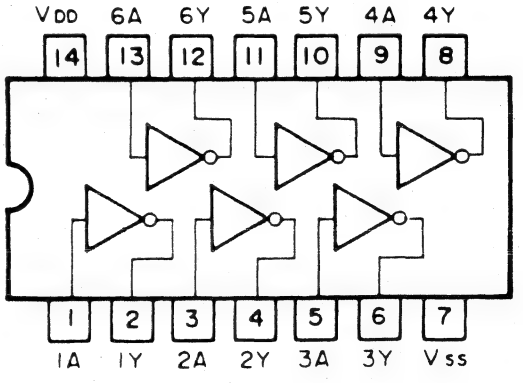
● **Pin Functions(CD0004AF)**

Pin No.	Pin Name	I/O	Function and Operation
1	$\overline{\text{RESET}}$	I	Power ON/RESET input. Reset with "L"
2	16/$\overline{24}$	I	Input format selecting terminal. provided with a pull-up resistor
3	$\overline{\text{A}}$/M	I	Input format selecting terminal. provided with a pull-up resistor
4,5	S1-2	I	Input selecting terminal
6-9	IN1-4	I	Data input terminal
10,11	$\overline{\text{TEST}}$1-2	I	Terminal for testing. Normally "H" or open. Provided with a pull-up resistor
12	PCVS		Input for setting self-propelling frequency for VCO
13	PCOUT1		Phase comparator output 1
14	R		Connecting terminal for VCO adjusting resistor
15	VCOIN		Control voltage input for VCO
16	VDD1		Power terminal for VCO line
17	VCOOUT		VCO output (384 fs)
18	VSS1		Grand terminal for VCO line
19,20	CA,CB		Connecting terminal for VCO adjusting capacity
21	PCOUT2		Phase comparator output 2
22	SIGIN	I	Input terminal for external VCO
23	BCK	O	Demodulated data bit clock output (64 fs)
24	DATA	O	Demodulated audio data output
25	LRCK	O	Demodulated data LR clock output. L channel with "H"
26,27	OMODE0-1	O	Data output format selecting terminal
28	VSS		Grand terminal for logic lin
29	BLOCK	O	Block start output terminal
30	UBIT	O	User data output terminal
31	CBIT	O	Channel status output terminal
32	VBIT	O	Validity output terminal
33	VDD		Power terminal for logic line
34	$\overline{\text{CS}}$	I	Chip select input terminal. Selecting state with "L"
35	SDATA	O	Serial data output terminal
36	SCK	I	Serial clock input terminal
37	COPY	O	Copy prohibit information output terminal
38	A/$\overline{\text{D}}$	O	Audio/digital data information output terminal
39	DAT	O	DAT information output terminal
40,41	FS0-1	O	Sampling frequency information output terminal
42	EMPH	O	Emphasis information output terminal
43	ERR	O	Data reading error output terminal. Error with "H"
44	VCOINH	I	Input terminal for stop of oscillation of internal VCO. Stop with "H"

IC1701:NJM3404AM



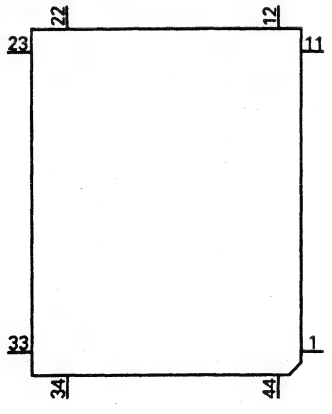
IC1702:MC74HCU04F



●**Pin Functions(M51581FP)**

Pin	Pin Name	I/O	Function
1	TX	O	Digital audio interface format output
2	RESET	I	Reset input
3	RX1	I	Digital audio data input 1
4	NFR	O	RX1 level converter output
5	RX2	I	Digital audio data input 2
6	RXSEL	I	RX select input
7,8	PD1,PD2	O	Phase comparative output for charge pump VCO
9	UNLOCK	O	Unlock detect output
10	RXCKI	I	VCO clock input
11	RXCKO	O	VCO clock output
12	SDI	I	Serial audio data input
13	BCK	I/O	Digital audio bit clock input/output
14	LRCK	I/O	Audio data word select input/output
15	SDO	O	Serial audio data output
16	ADSDI	I	A/D converter serial audio data input
17	VSS		GND
18	ADSEL	I	Serial data audio source select input
19	FLAGI	I	Error flag input
20	FLAGO	O	Error flag output
21	WCK	O	Word clock output
22	ASL	I	Audio data sampling length select input "H":24 bits "L":16 bits
23	IIS	I	Audio data format select input
24	MSBF	I	MSB select input
25	LRCKPOL	I	LRCK pole select input "H":Lch "L":Rch
26	MSTCK	I/O	Master clock input/output
27	CKSEL	I	Master clock frequency select input
28	REFCK	I	Reference clock input for sampling frequency accurate check
29	CKACO	O	Sampling frequency accurate check output
30	MUTE	I	Mute control input
31,32	MODE0-1	I	Mode select input
33	IN/out	I	Transmission reception select input
34,35	CAT0,1	I/O	Category information input/output
36	TXOE	I	TX output enable input
37	FSINSEL	I	fs information select input
38	VDD		Power supply
39	VSS		GND
40	TYPE	I/O	Type information input/output
41,42	FS0-FS1	I/O	fs information input/output
43	COPY	I/O	Copy information input/output
44	EMP	I/O	Emphasis information input/output

*IC1801:M51581FP



4. DC/DC CONVERTER CIRCUIT DIAGRAM

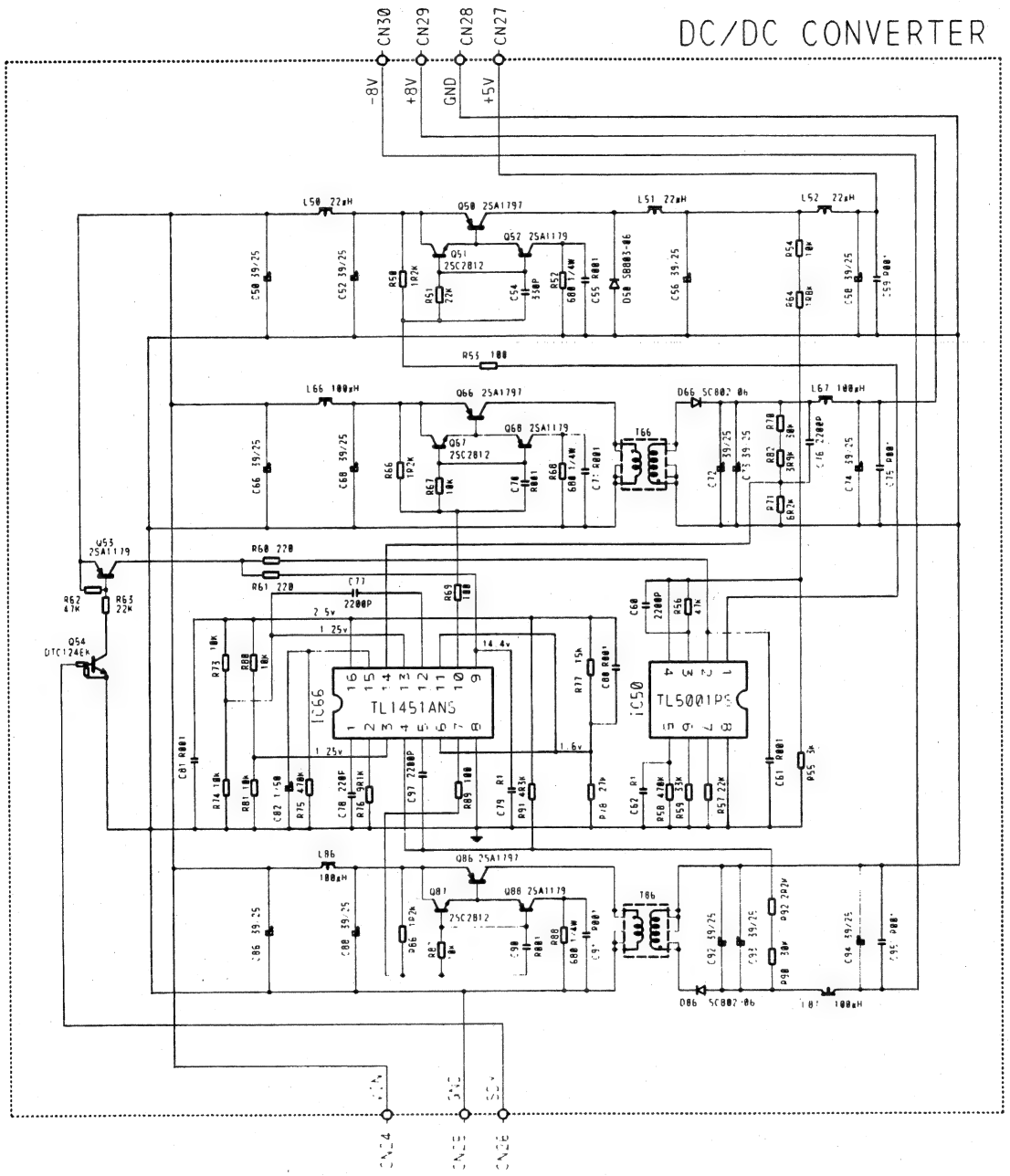


Fig.12

5. SCHEMATIC CIRCUIT DIAGRAM

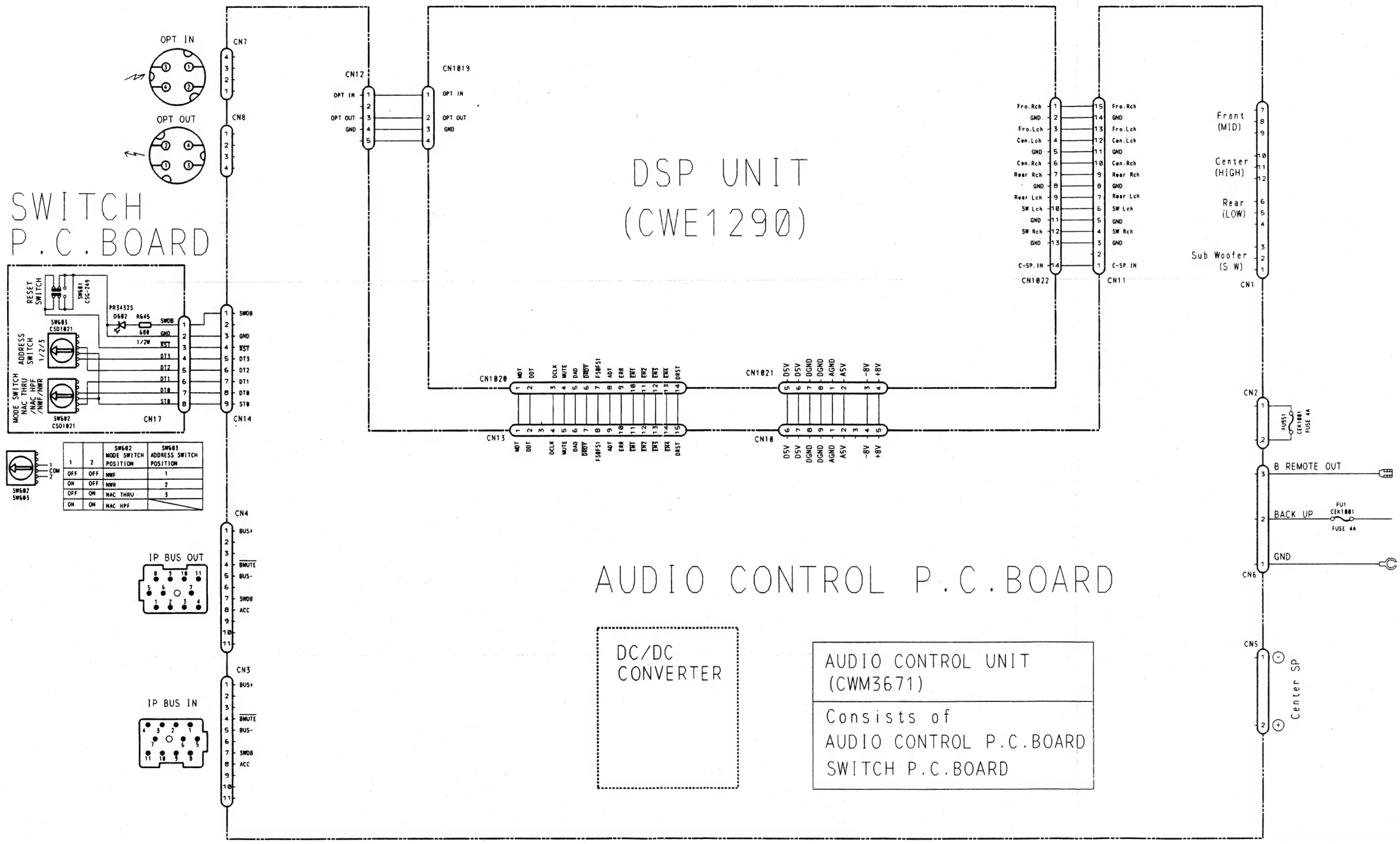


Fig.13

AUDIO CONTROL P.C. BOARD

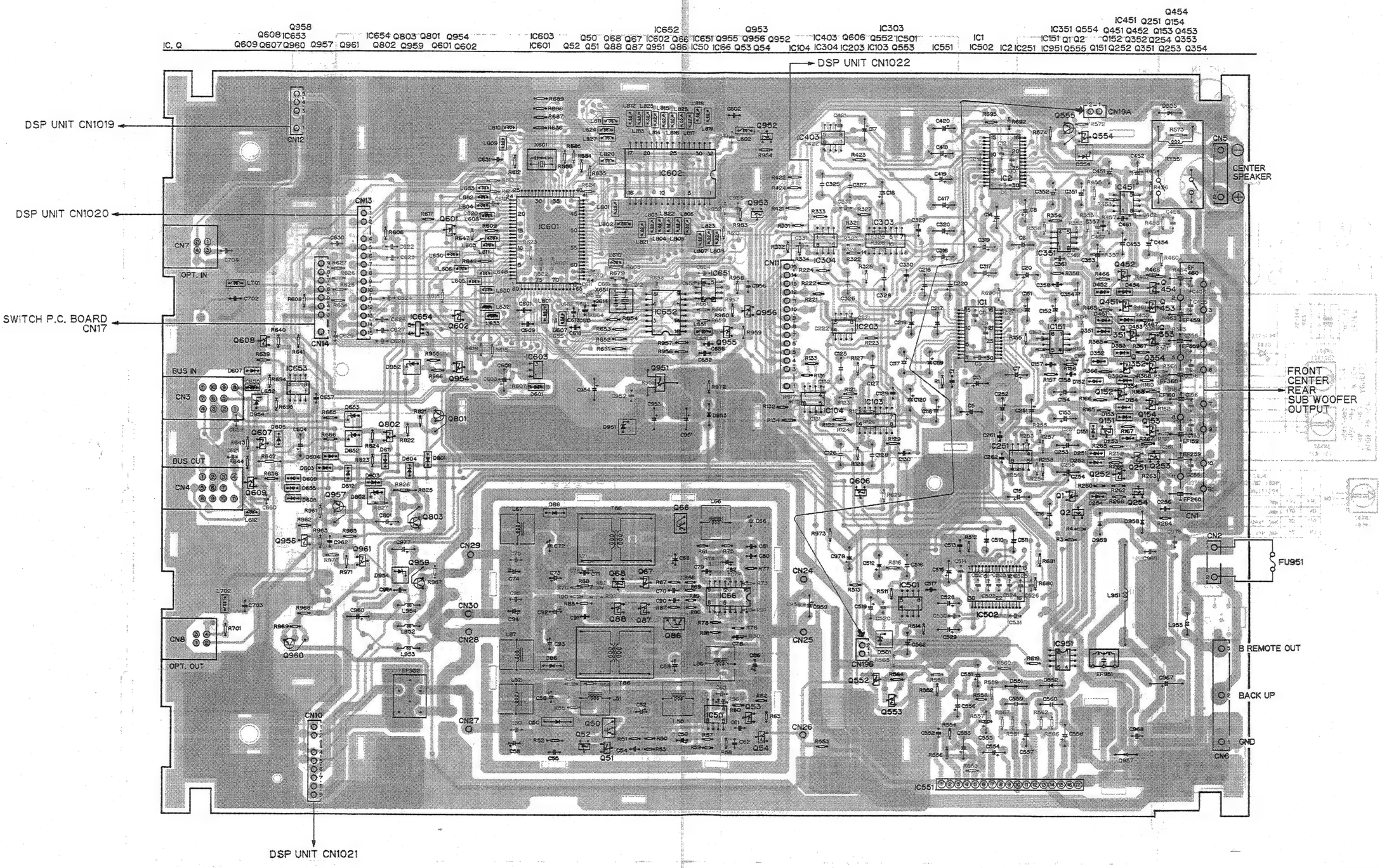


Fig.16

6. SWITCH P.C. BOARD

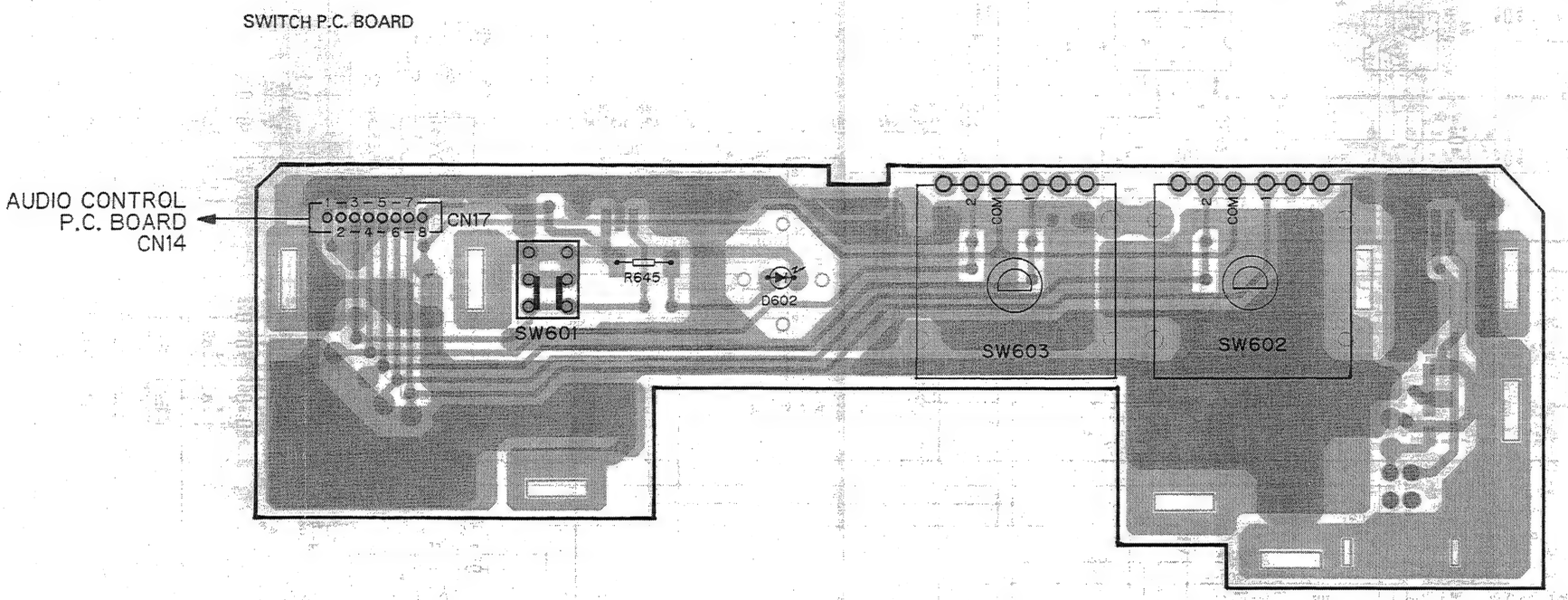
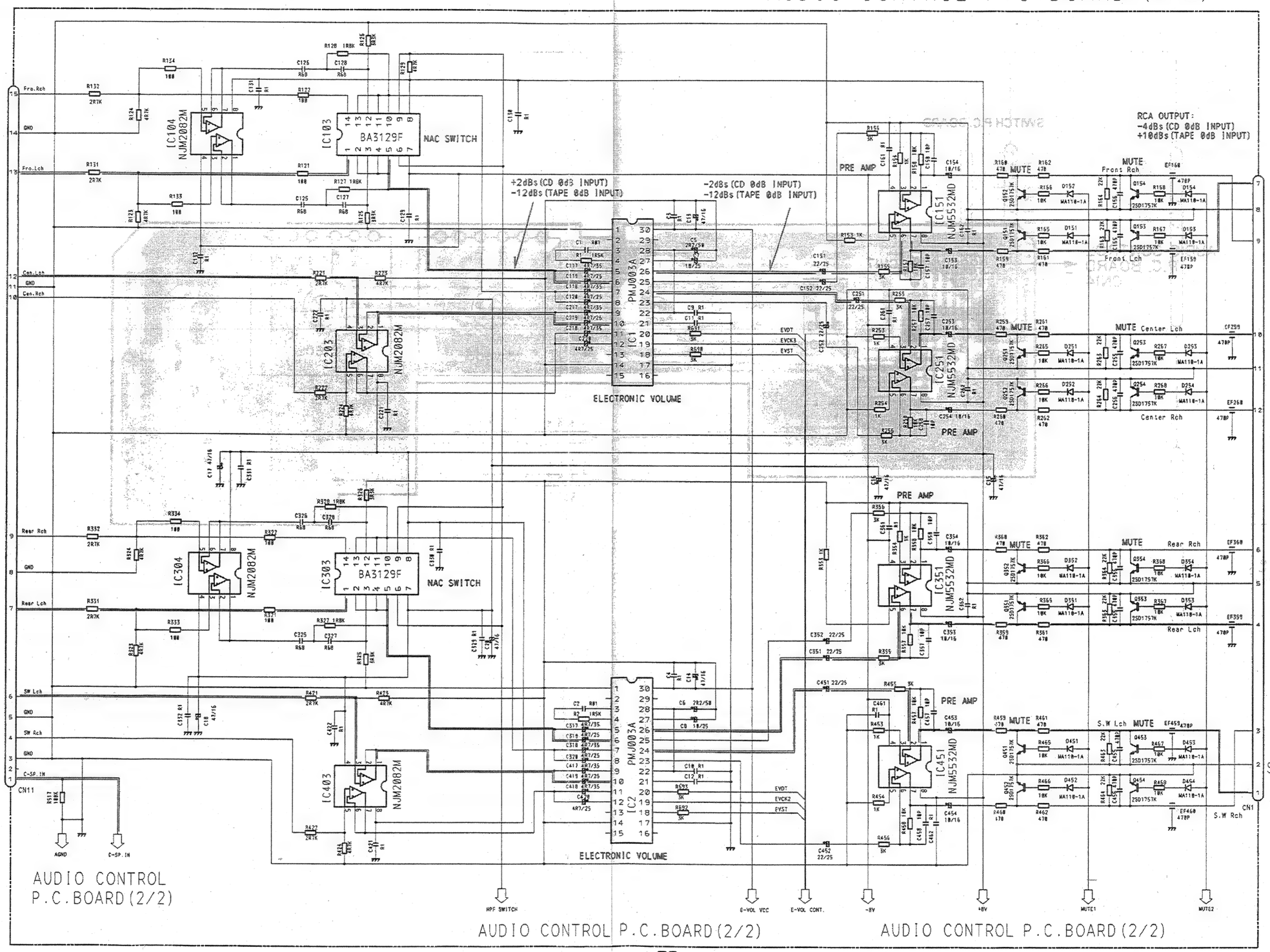
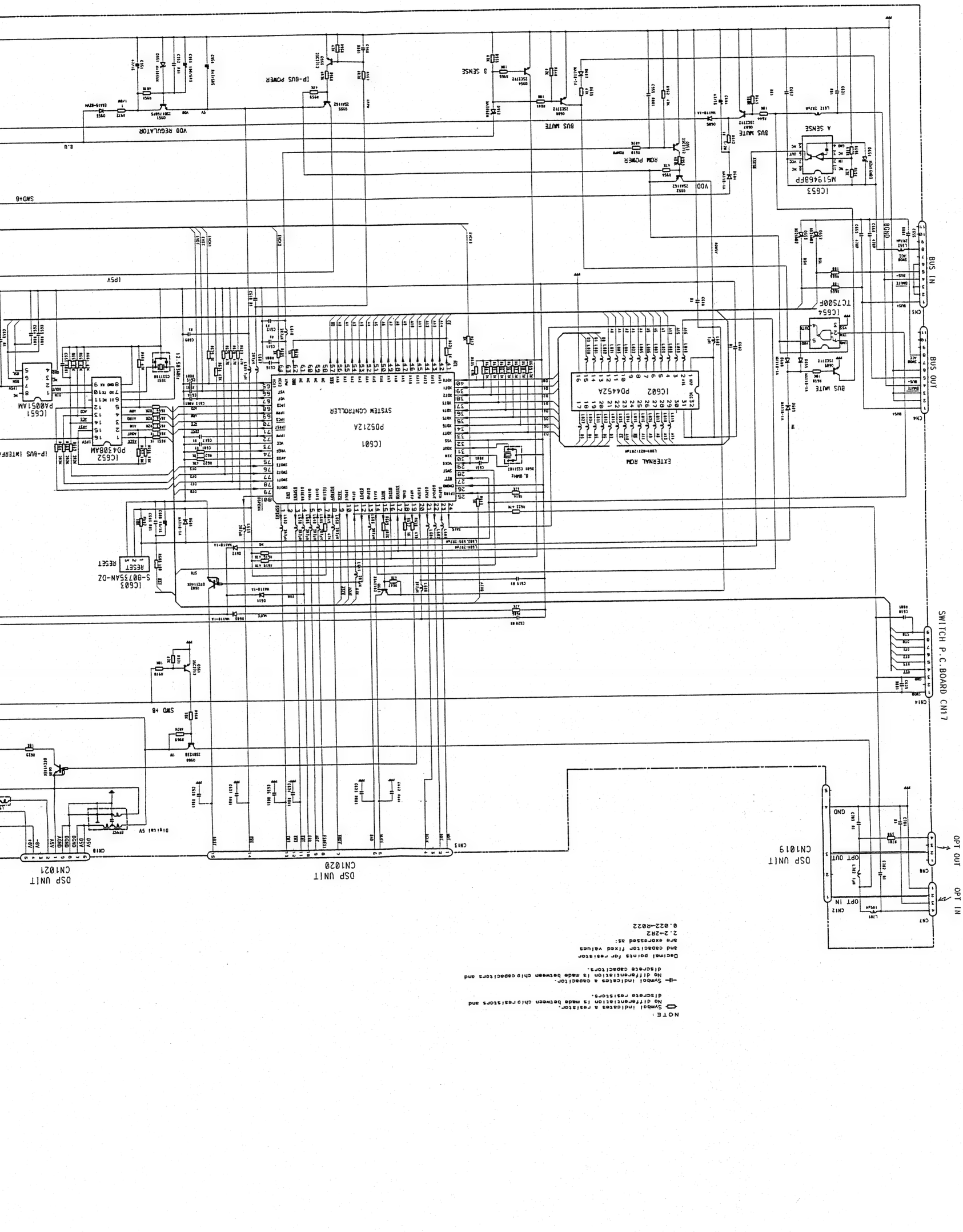


Fig.14

7. AUDIO CONTROL P.C. BOARD





NOTE :
- Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor values are expressed as:
2.2-2R2
0.022-R022

AUDIO CONTROL P.C.BOARD (2/2)

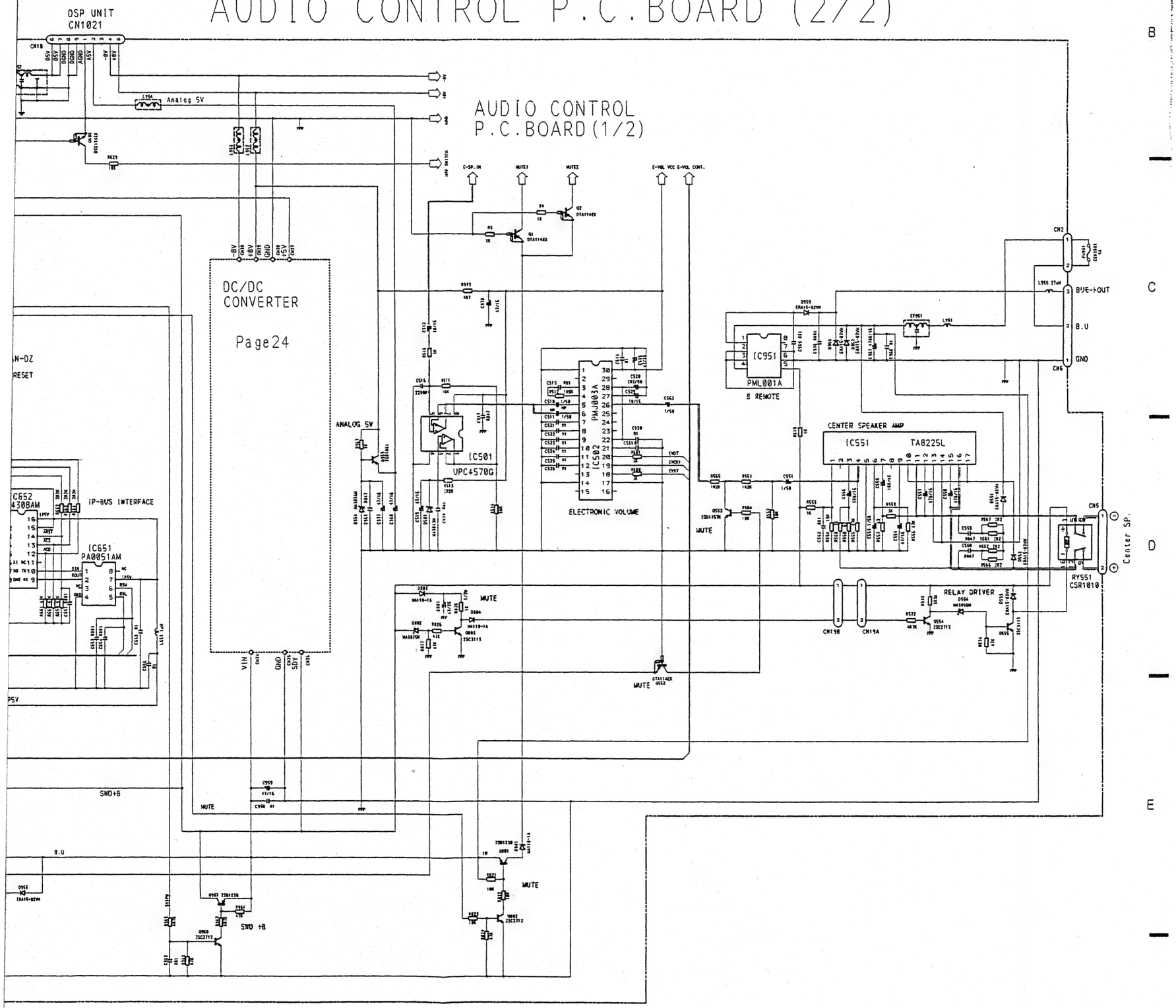
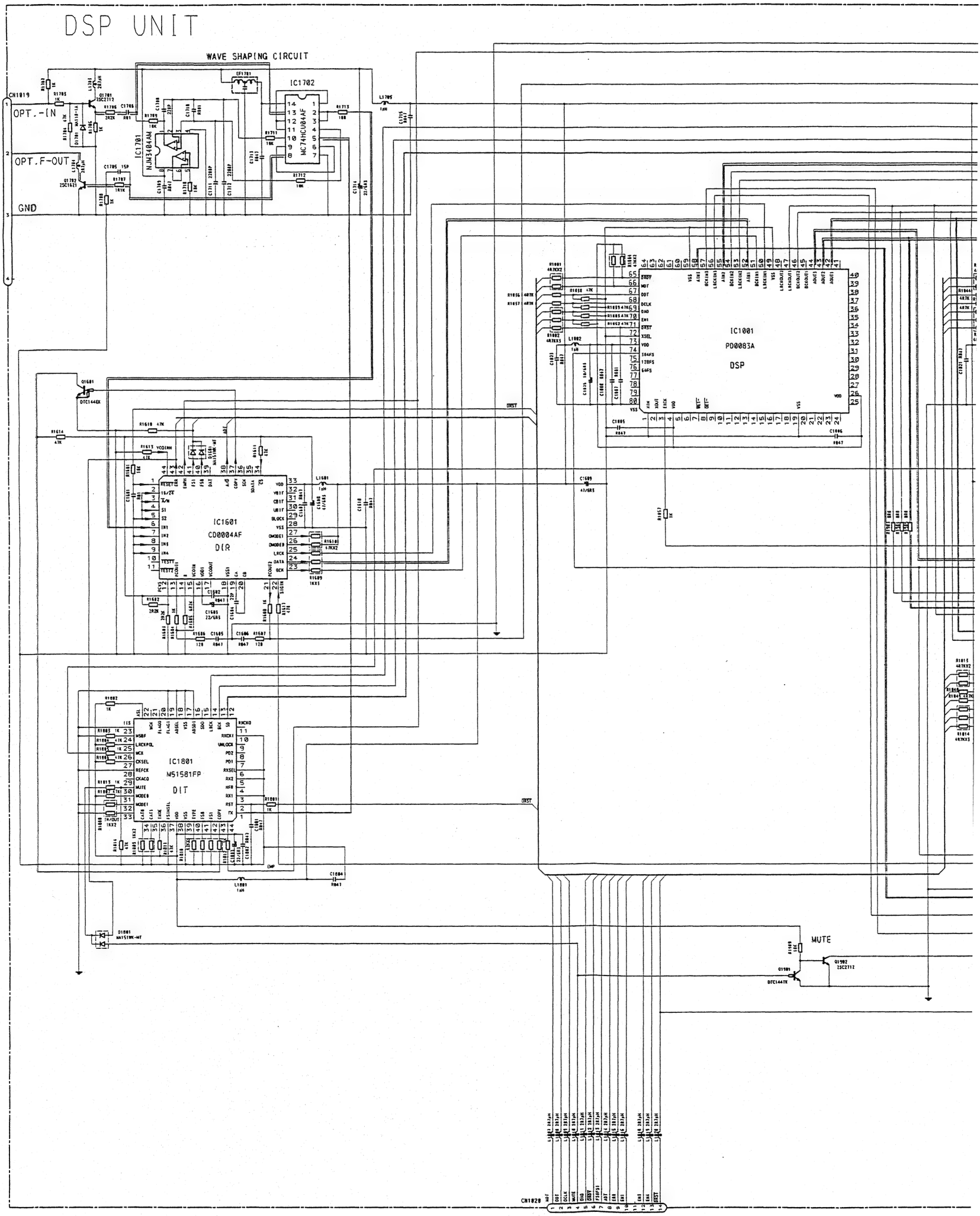


Fig.17

8. DSP UNIT


DSP UNIT
WAVE SHAPING CIRCUIT
AUDIO CONTROL P.C.BOARD
CN12
CN1819
OPT.-IN
OPT.F-OUT
GND
IC1701
NJM3404AM
IC1702
MC74HCU04AF
IC1001
PD0083A
DSP
IC1601
CD0004AF
DIR
IC1801
M51581FP
DIT
MUTE
CN1820
AUDIO CONTROL P.C.BOARD
CN13

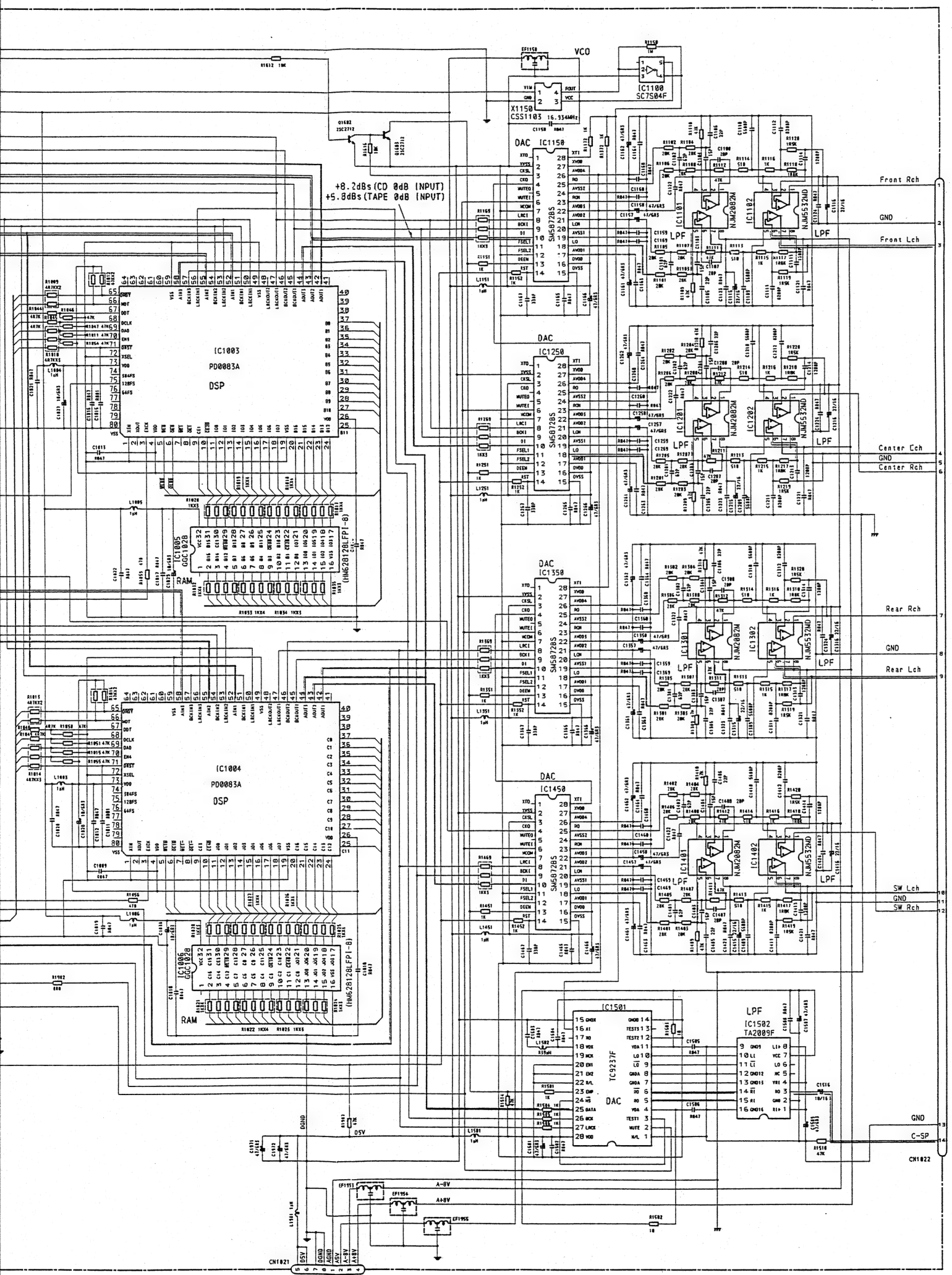

VCO
IC1100
SC7S04F
X1150
CSS1103 16.9344MHz
DAC IC1150
DAC IC1250
DAC IC1350
DAC IC1450
SM5872BS
+8.2dBs(CD 0dB INPUT)
+5.8dBs(TAPE 0dB INPUT)
IC1003
PD0083A
DSP
IC1004
PD0083A
DSP
IC1005
GGC1028
IC1006
GGC1028
RAM
(HM62128LFP1-8)
IC1101
IC1102
IC1201
IC1202
IC1301
IC1302
IC1401
IC1402
NJM2082M
NJM5532ND
LPF
IC1501
TC9237F
DAC
IC1502
TA2009F
Front Rch
GND
Front Lch
Center Lch
GND
Center Rch
Rear Rch
GND
Rear Lch
SW Lch
GND
SW Rch
GND
C-SP
CN1022
A-8V
A+8V
5SV
CN1021
AUDIO CONTROL P.C.BOARD
CN10
AUDIO CONTROL P.C.BOARD
CN11

Fig.18

DSP UNIT

IC, Q

Q1701 IC1102 IC1150 IC1101 IC1801 Q1902 Q1702 Q1901 Q1602 Q1603 IC1701 IC1702 Q1601 IC1100 IC1601

IC1201 IC1250 IC1202

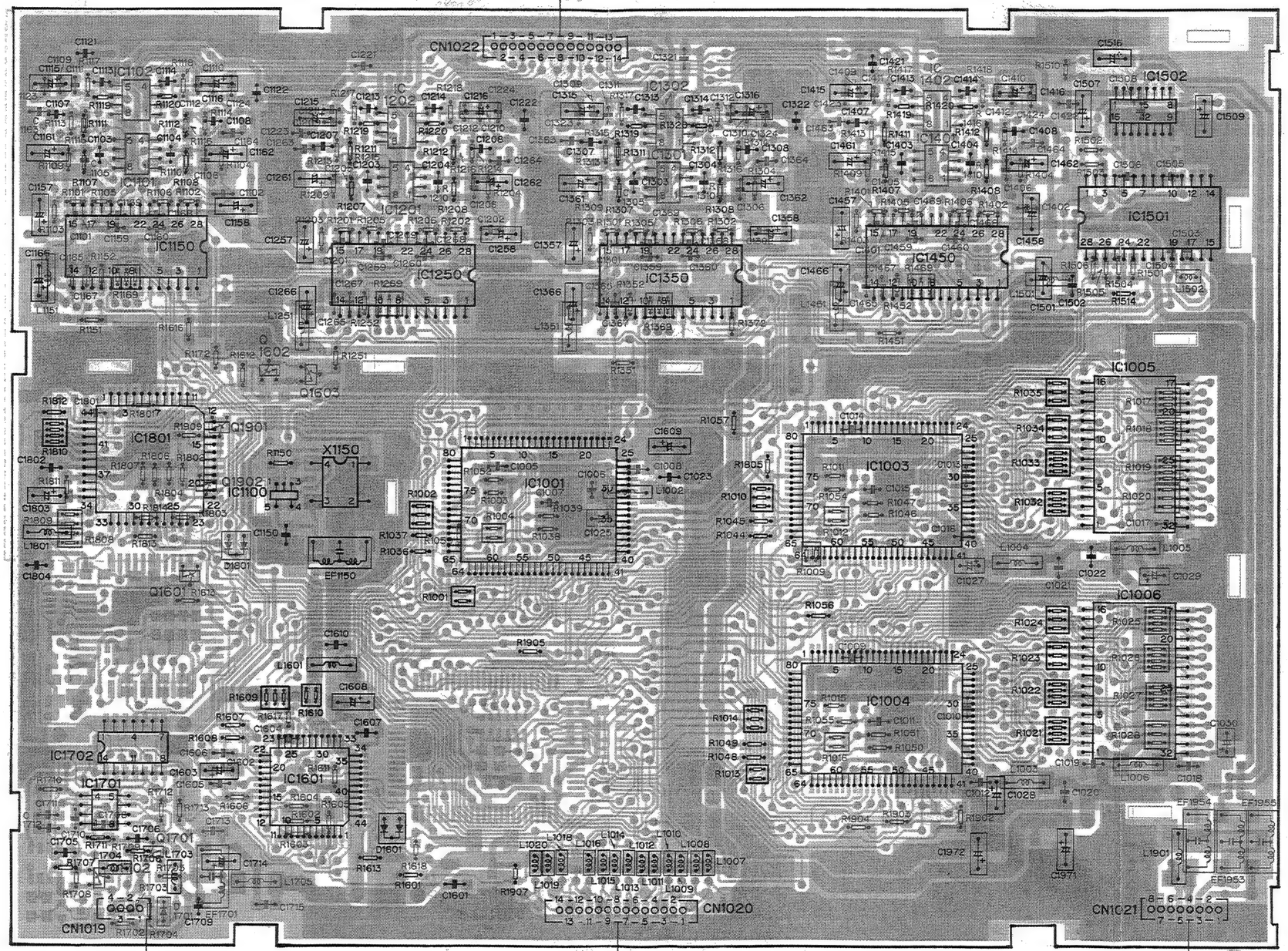
IC1001

IC1301 IC1350 IC1302

IC1401 IC1402 IC1004 IC1003 IC1450

IC1501 IC1502 IC1006 IC1005

AUDIO CONTROL P.C. BOARD CN11



AUDIO CONTROL P.C. BOARD CN12

AUDIO CONTROL P.C. BOARD CN13

AUDIO CONTROL P.C. BOARD CN10

Fig.19

9. EXPLODED VIEW

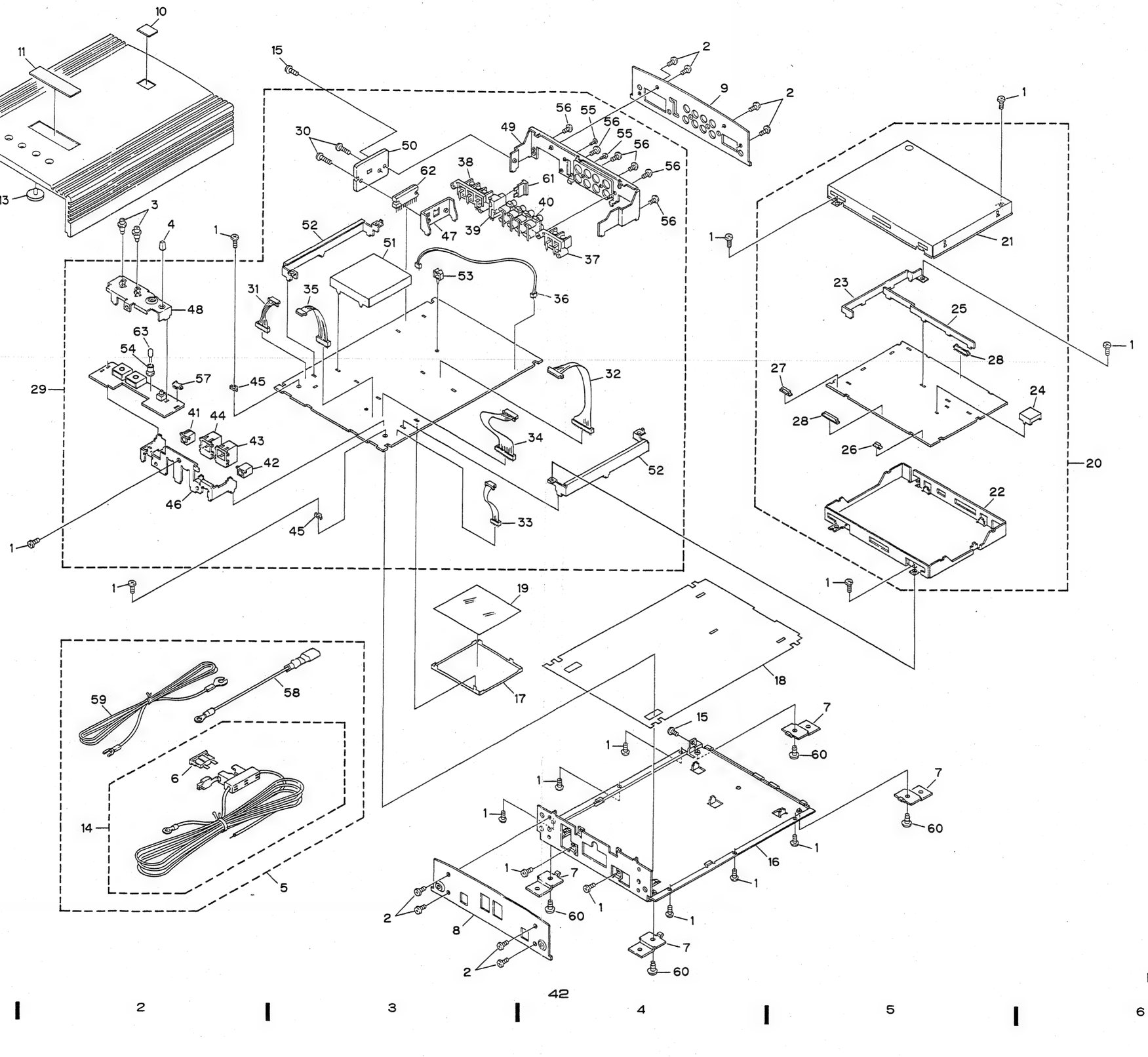


Fig.20

NOTES:
- *Parts marked by "✱ "are generally unavailable because they are not in our Master Spare Parts List.*
- *Parts marked by "◉"are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

● Parts List

Mark	No.	Description	Part No.
	1	Screw	BMZ30P050FCU
	2	Screw	BMZ30P050FZK
	3	Knob	CAA1316
	4	Button	CAC3566
	5	Cord Assy	CDE3955
	6	Fuse	CEK1001
✱	7	Bracket	CNC4763
	8	Panel	CNB1702
	9	Panel	CNB1703
	10	Badge	CAH1399
	11	Badge(UC)	CAH1427
		Badge(EW)	CAH1426
	12	Heat Sink(UC)	CNR1320
		Heat Sink(EW)	CNR1319
	13	Lens	CNS2053
	14	Cord	CDE3949
	15	Screw	BMZ30P060FCU
	16	Chassis	CNA1513
	17	Shield	CNC5042
	18	Insulator	CNM3611
	19	Insulator	CNM3806
	20	DSP Unit	CWE1290
	21	Case	CNC4759
	22	Shield	CNC4760
	23	Holder	CNC4909
	24	Shield	CNC5033
	25	Holder	CNC5038
	26	Connector(CN1019)	CKS2193
	27	Connector(CN1021)	CKS2197
	28	Connector(CN1020,1022)	CKS2203
	29	Audio Control Unit	CWM3671
	30	Screw	BMZ30P120FCU
	31	Cord(CN10)	CDE3966
	32	Cord(CN11)	CDE3967
	33	Cord(CN12)	CDE3968
	34	Cord(CN13)	CDE3969
	35	Cord(CN14)	CDE3970
	36	Connector	CDE4164
	37	Terminal(CN5)	CKE1005
	38	Terminal(CN6)	CKE1032
	39	Auto Fuse Holder(CN2)	CKR1011
	40	Pin Jack(CN1)	CKS1840
	41	Connector(CN8)	CKS1940
	42	Connector(CN7)	CKS2601
	43	Connector(CN3)	CKS2602
	44	Connector(CN4)	CKS2603
	45	Holder	CNC2218
	46	Holder	CNC4753
	47	Holder	CNC4755
	48	Holder	CNC4756
	49	Holder	CNC4757
	50	Heat Sink	CNC4758
	51	Shield	CNC4761
	52	Holder	CNC4910
	53	Clamper	CNV1443
	54	Holder	CNV3459
	55	Screw	PPZ20P060FZK
	56	Screw	PPZ30P080FZK
	57	Connector(CN17)	CKS2197
	58	Cord	CDE3960
	59	Cord	CDE3951
	60	Screw	BMZ40P050FMC
	61	Fuse(FU951)	CEK1001
	62	IC(IC551)	TA8225L
	63	Diode(D602)	PR3432S

10. PACKING METHOD

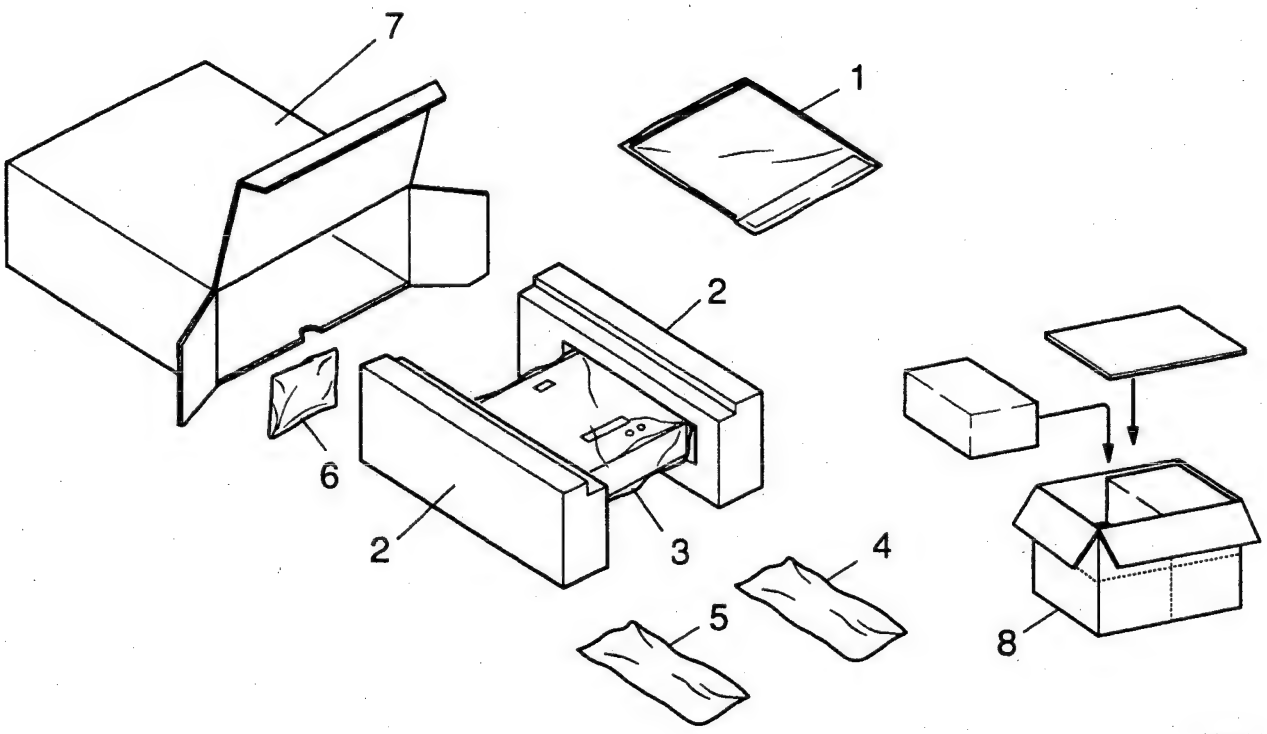


Fig.21

● **Parts List**

Mark	No.	Description	Part No.
	1-1	Owner's Manual(UC)	CRD1706
		Owner's Manual(EW)	CRD1659
		Owner's Manual(EW)	CRD1660
*	1-2	Warranty Card(UC)	CRY1053
*		Card(EW)	CRY-062
	1-3	Cover(18mm)	CNS2227
	1-4	Cover(25mm)	CNS2726
	1-5	Driver	CNV3579
*	1-6	Polyethylene Bag	E36-634
	2	Protector(×2)	CHP1578
	3	Cover	CEG1082
	4	Screw Assy	CEA1848
	4-1	Screw(×4)	BMZ40P050FMC
	4-2	Screw(×4)	BYC40P120FZK
	4-3	Screw	CBA1241
	4-4	Shaft	CLP1100
*	4-5	Polyethylene Bag	E36-613
	5	Accessory Assy	CEA1849
*	5-1	Bracket(×4)	CNC4763
*	5-2	Polyethylene Bag	CEG-020
	6	Cord Assy	CDE3955
	7	Carton(UC)	CHG2330
		Carton(EW)	CHG2331
	8	Contain Box(UC)	CHL2330
		Contain Box(EW)	CHL2331

1-1 Owner's Manual

Part No.	Model	Language
CRD1706	RS-P50/UC	English,French
CRD1659	RS-P50/EW	English,Italian,French, German
CRD1660	RS-P50/EW	Spanish,Swedish, Dutch

11. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

=====Circuit Symbol & No. Part Name=====		Part No.
Unit Number : CWE1290		
Unit Name : DSP Unit		
MISCELLANEOUS		
IC 1001 1003 1004		PD0083A
IC 1005 1006	(HM628128LFPI-8)	GGF1028
IC 1100		SC7S04F
IC 1101 1201 1301		NJM2082M
IC 1102 1202 1302 1402		NJM5532MD
IC 1150 1250 1350 1450		SM5872BS
IC 1401		NJM2082M
IC 1501		TC9237F
IC 1502		TA2009F
IC 1601		CD0004AF
IC 1701		NJM3404AM
IC 1702		MC74HCU04F
IC 1801		M51581FP
Q 1601		DTC144EK
Q 1602 1603 1701 1902		2SC2712
Q 1702		2SC1621
Q 1901		DTC144TK
D 1601		MA151WK-MT
D 1701		MA110-1A
D 1801		MA151WK-MT
L 1002 1003 1004 1005	Inductor	LCTA1R0K4532
L 1006 1151 1251 1351	Inductor	LCTA1R0K4532
L 1007 1008 1009 1010	Inductor	LCTB2R7K2125
L 1011 1012 1013 1014	Inductor	LCTB2R7K2125
L 1015 1016	Inductor	LCTB2R7K2125
L 1018 1019 1020	Inductor	LCTB2R7K2125
L 1451 1501 1705	Inductor	LCTA1R0K4532
L 1502	Inductor	LCTBR39K2125
L 1601 1801	Inductor	LCTA1R0K4532
L 1703 1704	Inductor	LCTA2R7J3225
L 1901	Inductor	CTF1250
X 1150	VCO	CSS1103
EF1150	EMI Filter	CCG1030
EF1701 1953 1954 1955	EMI Filter	CCG1030
RESISTORS		
R 1001 1013		RA2CQ472J
R 1002 1010 1014		RA3C472J
R 1003 1011 1015 1704 1804 1806 1807 1811 1814		RS1/10S473J
R 1004 1012 1016		RA2CQ473J
R 1009		RA2CQ472J
R 1017 1018 1019 1025 1026 1027		RA4C102J
R 1020 1028 1169 1269 1369 1469		RA3C102J
R 1021 1022 1032 1033		RA4C102J
R 1023 1024 1034 1035 1609		RA3C102J
R 1036 1037 1044 1045 1048 1049		RS1/10S472J
R 1038 1039 1046 1047 1050 1051 1052 1054 1055 1611		RS1/10S473J
R 1056		RS1/10S471J
R 1057		RS1/10S102J
R 1059		RS1/10S471J
R 1101 1102 1103 1104 1105 1106 1201 1202 1203 1204		RN1/10SE203D
R 1107 1108 1207 1208 1307 1308 1407 1408		RN1/10SE203D
R 1109 1110 1209 1210 1409 1410		RN1/10SE473D
R 1111 1112 1211 1212 1311 1312 1411 1412		RN1/10SE473D
R 1113 1114 1213 1214 1313 1314 1413 1414		RN1/10SE511D
R 1115 1116 1215 1216 1315 1316 1415 1416		RN1/10SE102D
R 1117 1118 1217 1218 1317 1318 1417 1418		RN1/10SE182D
R 1119 1120 1219 1220 1319 1320 1419 1420		RN1/10SE152D
R 1150		RS1/10S105J
R 1151 1152 1251 1252 1351 1352 1372 1451 1452 1501		RS1/10S102J
R 1172		RS1/10S102J
R 1205 1206 1301 1302 1303 1304 1305 1306 1401 1402		RN1/10SE203D
R 1309 1310		RN1/10SE473D
R 1403 1404 1405 1406		RN1/10SE203D
R 1502 1503		RS1/10S100J
R 1504 1505 1506 1702 1703 1705 1708 1801 1802		RS1/10S102J
R 1510		RS1/10S473J
R 1514 1613		RS1/10S473J
R 1601 1711		RS1/10S103J
R 1602 1603		RS1/10S222J
R 1604 1803 1813		RS1/10S102J
R 1605		RS1/10S822J
R 1606		RS1/10S121J
R 1607		RS1/10S121J
R 1608 1805 1812		RS1/10S102J
R 1610		RA2CQ473J
R 1612 1616 1709 1710 1712 1909		RS1/10S103J
R 1614 1618		RS1/10S473J
R 1617		RS1/10S471J
R 1706		RS1/10S222J
R 1707		RS1/10S112J
R 1713		RS1/10S101J
R 1808 1809		RA2CQ102J
R 1810		RA4C473J
R 1902 1903 1904		RS1/10S0R0J
R 1905		RS1/10S0R0J
R 1907		RS1/10S473J
CAPACITORS		
C 1005 1006 1008 1009 1010 1012 1013 1014 1016 1018		CKSQYB473K16
C 1007 1011 1015 1710		CKSQYB102K50
C 1017		CKSQYB473K16
C 1019 1020 1021 1602 1605 1606		CKSQYB473K16
C 1022 1023 1607 1610		CKSQYB473K16
C 1025 1027 1029 1030		CSZSR100M6R3
C 1028		CSZSR100M6R3
C 1101 1102 1201 1202 1301 1302 1401 1402		CCSQCH620J50
C 1103 1104 1203 1204 1303 1304 1403 1404 1705		CCSQCH150J50
C 1105 1106 1205 1206 1305 1306 1405 1406 1604		CCSQCH220J50
C 1107 1108 1207 1208 1307 1308 1407 1408		CCSQCH200J50
C 1109 1110 1209 1210 1309 1310 1409 1410		CFHSQ562G16
C 1111 1112 1211 1212 1311 1312 1411 1412		CFHSQ822G16
C 1113 1114 1213 1214 1313 1314 1413 1414		CFHSQ122G50
C 1115 1116 1215 1216 1315 1316 1415 1416		CEV220M16

=====Circuit Symbol & No. Part Name=====	Part No.
C 1121 1122 1222 1322 1502 1709 1802 1804	CKSQYB473K16
C 1123 1124 1159 1160 1163 1164 1165 1221 1223	CKSQYB473K16
C 1150	CKSQYB473K16
C 1157 1158 1161 1162 1166 1257 1258 1261 1262 1266	CEV470M6R3
C 1167 1267 1367 1467	CCSQSL331J50
C 1168 1169 1268 1269 1368 1369 1468 1469	CKSQYB473K16
C 1224 1259 1260 1263 1264 1265 1321 1323 1324 1359	CKSQYB473K16
C 1357 1358 1361 1362 1366 1457 1458 1461	CEV470M6R3
C 1360 1363 1364 1365 1423 1424 1459 1460 1463	CKSQYB473K16
C 1421	CKSQYB473K16
C 1422	CKSQYB473K16
C 1462 1466 1501 1507 1509 1608 1609 1971 1972	CEV470M6R3
C 1464 1465 1503 1504 1505 1506 1508 1713 1715 1801	CKSQYB473K16
C 1516	CEV100M16
C 1601 1706	CKSQYB103K25
C 1603 1714 1803	CEV220M6R3
C 1708	CKSQYB221K50
C 1711 1712	CKSQYB222K50

Audio Control Unit
Consists of
Switch P.C.Board
Audio Control P.C.Board

Unit Number : CWM3671
Unit Name : Audio Control Unit

MISCELLANEOUS

IC 1 2	PMJ003A
IC 50	TL5001PS
IC 66	TL1451ANS
IC 103 303	BA3129F
IC 104 203 304 403	NJM2082M
IC 151 251 351 451	NJM5532MD
IC 501	UPC4570G
IC 502	PMJ003A
IC 551	TA8225L
IC 601	PD5212A
IC 602	PD4452A
IC 603	S-80735AN-DZ
IC 651	PA0051AM
IC 652	PD4308AM
IC 653	M51946BFP
IC 654	TC7S00F
IC 951	PML001A
Q 1 2 552	DTA114EK
Q 50 66 86	2SA1797
Q 51 67 87	2SC2812
Q 52 53 68 88	2SA1179
Q 54	DTC124EK
Q 151 152 153 154 251 252 253 254 351 352	2SD1757K
Q 353 354 451 452 453 454 553	2SD1757K
Q 554	2SC2712
Q 555 803	2SC3113
Q 601 952	2SA1162
Q 602 606	DTC114EK
Q 607 608 609 953 954 956 958	2SC2712
Q 801 957 960	2SB1238
Q 802 961	2SC2712
Q 951	2SD1760F5
Q 955	2SA1162
Q 959	2SD1864
D 50	SB803-06
D 66 86	SC802-06
D 151 152 153 154 251 252 253 254 351 352	MA110-1A
D 353 354 451 452 453 454 601 603 604 605	MA110-1A
D 501	MA3043M
D 551 552 957 958 959	ERA15-02VH

=====Circuit Symbol & No. Part Name=====	Part No.
D 554	MA3056M
D 555	ERA15-02VH
D 602	PR3432S
D 607 608 609	MA110-1A
D 611 612	MA110-1A
D 652 653	RD24MB2
D 654	HZM16NB3
D 655	MA110-1A
D 801 803 804	MA110-1A
D 802	MA3075H
D 951 954	MA3056M
D 952	MA3068M
D 953	ERA15-02VH
L 50 51 52 Choke Coil	CTH1109
L 66 67 86 87 Coil	CTH1110
L 601 602 651 702 Inductor	LCTA1R0J3225
L 603 604 605 606 Inductor	LCTB2R7K2125
L 607 608 Inductor	LCTB2R7K2125
L 610 Inductor	LCTB2R7K2125
L 611 Inductor	LCTB2R7K2125
L 612 Inductor	LCTB2R7K2125
L 630 632 633 648 Inductor	LCTB2R7K2125
L 650 Inductor	LCTB2R7K2125
L 652 Inductor	LCTB2R7K2125
L 682 683 Inductor	LCTB2R7K2125
L 701 Inductor	LCTA1R5J3225
L 801 809 810 Inductor	LCTB2R7K2125
L 802 803 804 805 Inductor	LCTB2R7K2125
L 806 807 Inductor	LCTB2R7K2125
L 808 811 812 813 Inductor	LCTB2R7K2125
L 814 815 816 817 Inductor	LCTB2R7K2125
L 818 819 Inductor	LCTB2R7K2125
L 820 Inductor	LCTB2R7K2125
L 821 822 823 824 Inductor	LCTB2R7K2125
L 825 826 827 Inductor	LCTB2R7K2125
L 951 Choke Coil	CTH1103
L 952 953 954 Inductor	CTF1200
L 955 Coil	CTF1135
T 66 86 Transformer	CTT1030
RY 551 Relay	CSR1010
X 601 Ceramic Resonator	CSS1107
X 651 Ceramic Resonator	CSS1108
SW601 Switch	CSG-249
SW602 603 Switch	CSD1021
FU 951 Fuse 4A	CEK1001
EF 159 160 259 260 EMI Filter	CCG1050
EF 359 360 459 460 EMI Filter	CCG1050
EF 951 EMI Filter	CCG1006
EF 952 EMI Filter	CCG1025

RESISTORS

R 1	RS1/10S152J
R 2	RS1/10S152J
R 3 4	RS1/10S102J
R 50 66 86	RS1/10S122J
R 51 63	RS1/10S223J
R 52 68 88	RS1/4S681J
R 53 69 89 121 122 133 134 321 322 333	RS1/10S101J
R 54 73 74 80	RN1/10SE103D
R 55	RN1/10SE302D
R 56	RS1/10S473J
R 57	RN1/10SE223D
R 58 75	RS1/10S474J
R 59	RS1/10S333J
R 60 61	RS1/10S221J
R 62 606 635 636 639 640 647 684 685	RS1/10S473J

=====Circuit Symbol & No. Part Name=====										Part No.
R	64									RN1/10SE182D
R	67	87	167	168	267	268	367	368	467	468	RS1/10S103J
R	70	90									RN1/10SE303D
R	71										RN1/10SE622D
R	76										RN1/10SE912D
R	77										RN1/10SE153D
R	78										RN1/10SE273D
R	81										RN1/10SE103D
R	82										RN1/10SE392D
R	91										RN1/10SE432D
R	92										RN1/10SE222D
R	123	124	323	324	610						RS1/10S472J
R	125	126	325	326							RS1/10S332J
R	127	128	327	328							RS1/10S182J
R	129	223	224								RS1/10S472J
R	131	132	221	222	331	332	421	422			RS1/10S272J
R	153	154	253	254	453	454					RS1/10S102J
R	155										RS1/10S302J
R	156	255	256	355	356	455	456				RS1/10S302J
R	157	158	257	258	358						RS1/10S103J
R	159	160	161	162	259	261	359	360			RS1/10S471J
R	163	164	363	364	463	464					RS1/10S223J
R	165	166	265	266	365	366	465	466			RS1/10S103J
R	260	262									RS1/10S471J
R	263	264									RS1/10S223J
R	334	608	665	666							RS1/10S101J
R	353										RS1/10S102J
R	354										RS1/10S102J
R	357	457	458								RS1/10S103J
R	361	362	459	460	461	462	618				RS1/10S471J
R	423	424	609	953	960	962					RS1/10S472J
R	511										RS1/10S103J
R	512										RS1/10S152J
R	513										RS1/10S222J
R	514										RS1/10S563J
R	516										RS1/10S102J
R	517										RS1/10S104J
R	551	565									RS1/10S122J
R	552										RS1/10S103J
R	553										RS1/10S102J
R	554										RS1/10S153J
R	555										RS1/10S473J
R	556										RS1/10S473J
R	557										RS1/10S620J
R	558										RS1/10S620J
R	559										RS1/10S302J
R	560										RS1/10S302J
R	561	562	566	567							RS1/8S2R2J
R	564	638	641	644							RS1/10S103J
R	572										RS1/10S472J
R	573										RS1/8S332J
R	574										RS1/10S473J
R	605										RS1/10S302J
R	607	629									RS1/10S103J
R	612										RS1/10S302J
R	613	620	624	651	652						RS1/10S102J
R	614	615	616	621	622	623	625	626	627		RS1/10S473J
R	617										RS1/10S102J
R	619										RS1/10S102J
R	634	658	659	660	661						RS1/10S473J
R	642										RS1/2S102J
R	643										RS1/10S104J
R	645										RS1/2S681J
R	649										RS1/10S473J
R	653	654									RS1/10S222J

=====Circuit Symbol & No. Part Name=====										Part No.
R	655	662	663	664							RS1/10S222J
R	656	657									RS1/10S103J
R	679	680	681								RS1/10S302J
R	686	687	688	689	954	955	958	959	961		RS1/10S473J
R	690	691									RS1/10S302J
R	692	693									RS1/10S302J
R	694										RS1/10S473J
R	695										RS1/10S474J
R	701										RS1/10S391J
R	821	822	823	966	968						RS1/10S103J
R	824	963	971								RS1/10S473J
R	825										RS1/2S102J
R	826										RS1/10S102J
R	827	952									RS1/10S473J
R	951										RS1/10S472J
R	957										RS1/10S472J
R	965	969									RS1/10S472J
R	967										RS1/10S102J
R	970										RS1/10S103J
R	972										RS1/8S1R0J
R	973										RS1/10S4R7J

CAPACITORS

C	1	962								CKSQYB103K25
C	2	603	952	969						CKSQYB103K25
C	3	4	9	10	11	12	704	958		CKSQYB104K25
C	5	6								CEAS2R2M50
C	7	8								CEAS100M25
C	13	14	515	951	959	960	977			CEA470M16LL
C	15	16	17	18	20					CEA470M16LL
C	50	52	56	58	39μF/25V					CCH1162
C	54									CKSQYB331K50
C	55	61	70	71	80	81	90	91		CKSQYB102K50
C	59	75	95	651	653	654				CKSQYB102K50
C	60	76	77	97						CKSQYB222K50
C	62	79								CKSQYB104K25
C	66	68	72	73	39μF/25V					CCH1162
C	74	86	88		39μF/25V					CCH1162
C	78									CCSQCH221J50
C	82									CEHAS010M50
C	92	93	94		39μF/25V					CCH1162
C	117	118	217	218	317	318	417	418		CEA4R7M35LL
C	119	120	219	220	319	320	419	420		CEWAR4R7M25
C	125	126	127	128						CFTXA684J50
C	129	130	329	330	602	652	702	703		CKSQYB104K25
C	131	132	161	162						CKSQYB104K16
C	151	152	251	252	351	352	451	452		CEZA220M25
C	153	154	253	254	353	354	453	454		CEZA100M16
C	155	156	255	355	356	455	456			CCSQSL471J50
C	157	158	357	358						CCSQCH100D50
C	221	222								CKSQYB104K16
C	256									CCSQSL471J50
C	257	258	457	458						CCSQCH100D50
C	261	262	361	461						CKSQYB104K16
C	325	326	327	328						CFTXA684J50
C	331	332	362							CKSQYB104K16
C	421	422	462							CKSQYB104K16
C	510	511								CEA010M50NPLL
C	512									CEWAR100M16
C	513									CKSQYB103K25
C	514	521	522	523	524	525	526	530	531	CKSQYB104K16
C	516									CQMA222J50
C	517									CKSQYB473K16

=====Circuit Symbol & No.	Part Name=====	Part No.
C 519		CEA470M16LL
C 520		CKSQYB103K25
C 528		CEA2R2M50LL
C 529		CEA100M16LL
C 551		CEZA010M50
C 552		CKSQYB103K25
C 553		CEA010M50LL
C 554		CEAS470M16
C 555 556		CEAS101M16
C 557 558	470µF/16V	CCH-114
C 559 560		CFTXA473J50
C 562		CEZA010M50
C 601		CKSYB104K16
C 604		CEA470M16LL
C 608		CEA100M16LL
C 609 617 618 656		CKSQYB104K16
C 610 611 612 619 620		CKSQYB104K16
C 613 614 631		CKSQYB102K50
C 615 616		CKSQYB102K50
C 621		CKSQYB103K50
C 622 623 624 626 627 628 629 630		CKSQYB102K50
C 655		CKSQYB102K50
C 657		CKSQYB103K25
C 659 660		CCSQCH471J50
C 801		CEA470M25LL
C 953		CEA101M6R3LL
C 954	0.47µF/5.5V	CCL1016
C 955		CKSQYB102K50
C 956		CKSQYB102K50
C 961		CKSQYB473K16
C 967	4700µF/16V	CCH1068
C 968		CKSQYB104K25
C 976		CKSQYB102K50
C 978		CEA470M16LL

Miscellaneous Parts List

FU	1	Fuse 4A	CEK1001

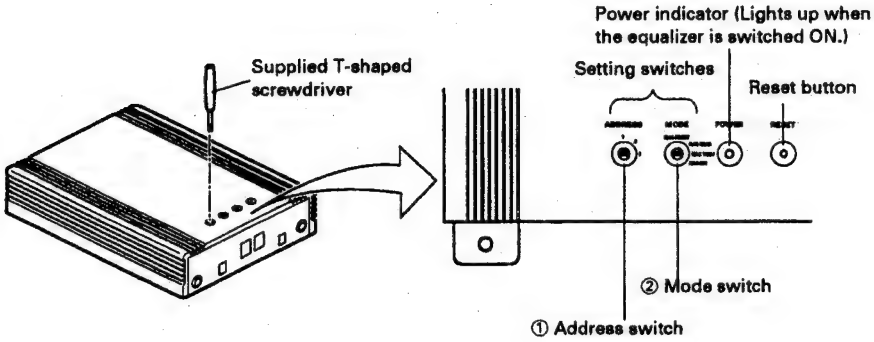
12. OPERATIONS AND CONNECTION

Setting of this unit

This unit has two setting switches: address and mode. Set these switches according to your system. Incorrect setting will result in improper operation of the ODR System.

Switching the setting

1. **Change the setting of the switches using the T-shaped screwdriver supplied with the equalizer.**
   > Keep the supplied T-shaped screwdriver in a safe place.



2. **Press the Reset button.**
   Always press the Reset button after changing a setting switch (see "Reset Button"). Otherwise the new setting will not be registered.

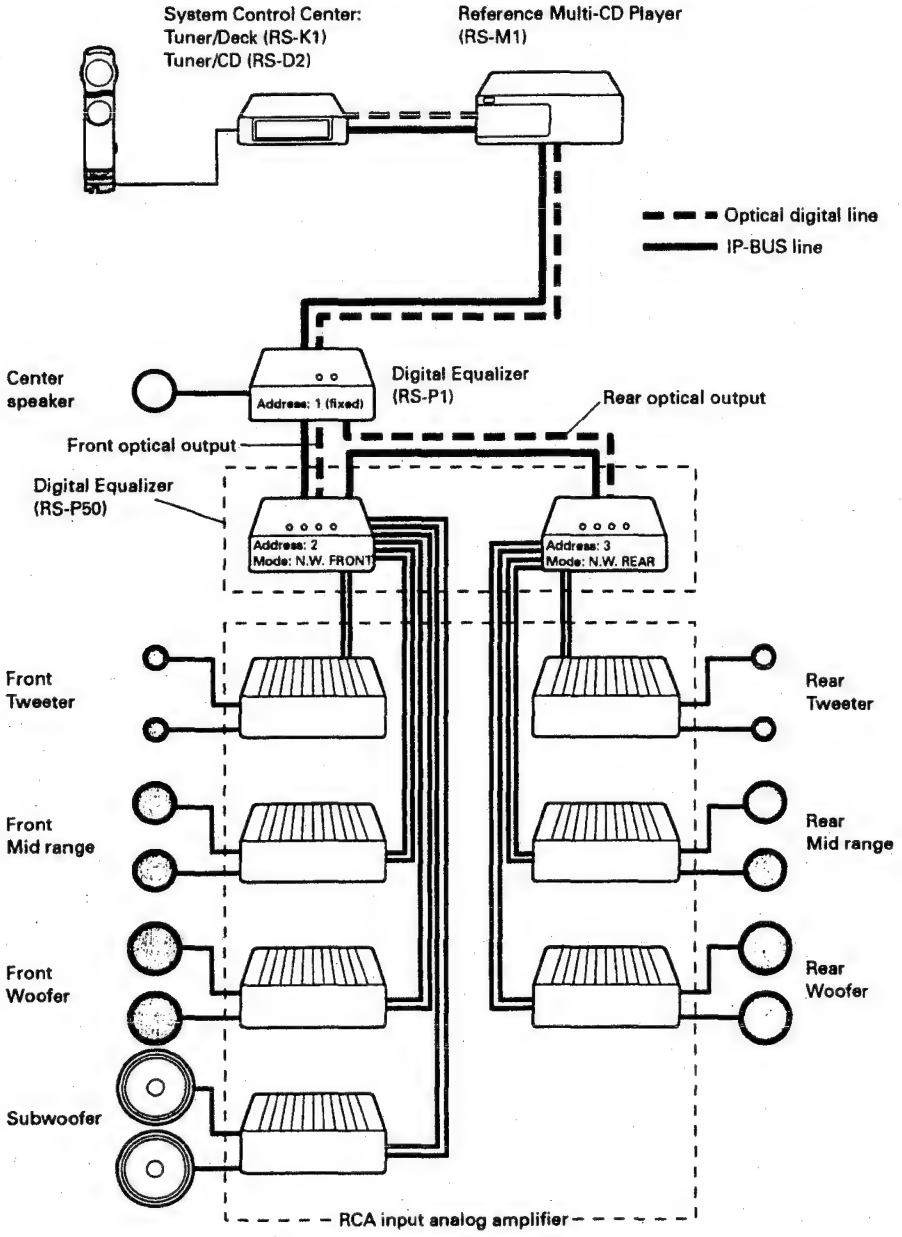
Setting Example

> Read the manual of the ODR System Control Center for specific setting examples.

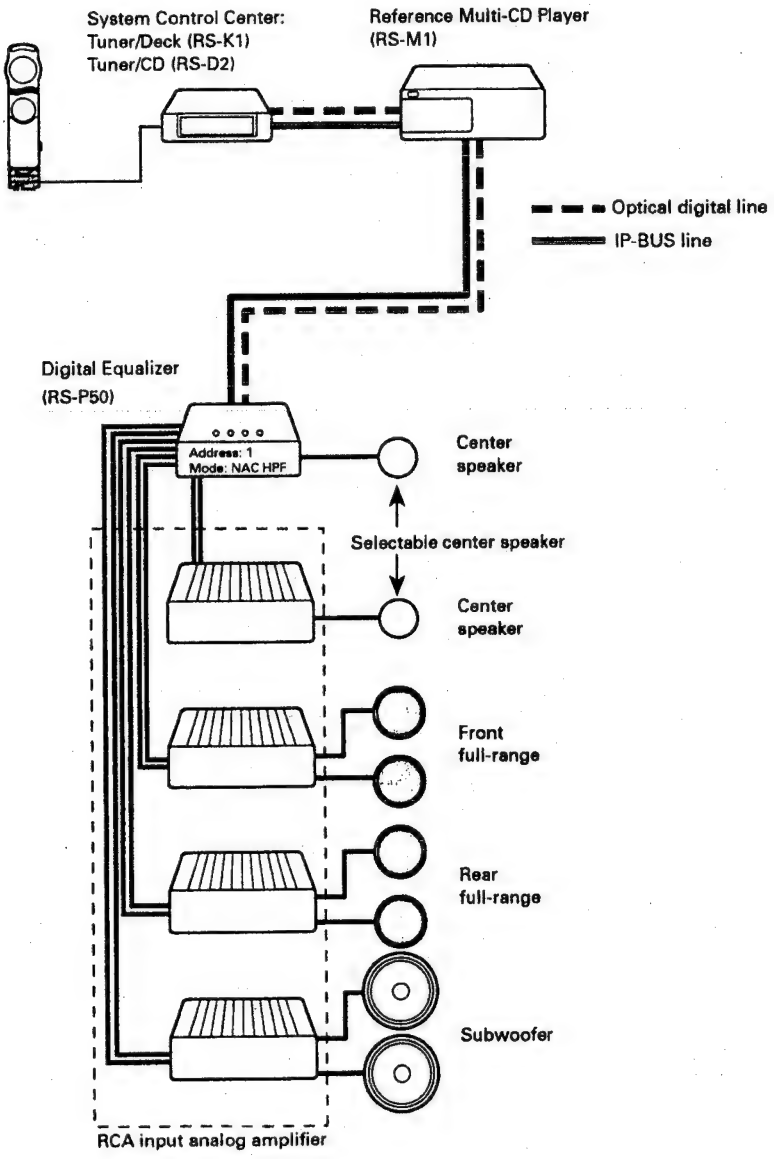
Using the RS-P50 for digital network (Example of maximum system connection)

> Connect the center speaker to the center speaker output of the digital equalizer which is assigned as Address 1. No sound will be output when the speaker is connected to the center speaker output of the digital equalizer assigned as either Address 2 or 3.

> To ensure better sound quality, connect the subwoofer to the front OUT. (Although the subwoofer should be connected to the front OUT, it may be installed to either front or rear.)



Using the RS-P50 for NAC



① Address setting

Multiple audio units* such as the RS-P50 Equalizer and Digital Amplifiers can be connected to the ODR System. Therefore, each audio unit must be assigned an address as identification number (1 to 8).
Set the address according to the following rules:

- Set a unique address to each audio unit.
- The first audio unit must be assigned to Address 1.
- If the Digital Equalizer RS-P1 is included among the audio units, it must be assigned as Address 1. Therefore, assign either Addresses 2 or 3 to the Digital Equalizer RS-P50.

> The RS-P1 is fixed to Address 1, and this setting cannot be changed.

- If the Digital Equalizer RS-P1 is not used, assign Address 1 to one of the RS-P50.

② Mode setting

Set the mode of the RS-P50 according to your system.

N.W. FRONT (network/front) mode
N.W. REAR (network/rear) mode

Set to this mode when using the unit as a digital network. To output front audio from RCA OUTPUT, set to N.W. FRONT. To output rear audio from RCA OUTPUT, set to N.W. REAR.
RCA OUTPUT: Outputs high-range, mid-range, low-range and subwoofer audio.
Optical OUTPUT (Address1): Outputs signals with reversed channels from front/rear of RCA OUTPUT.
(Address 2 or 3): Outputs signals as they are from Optical INPUT.

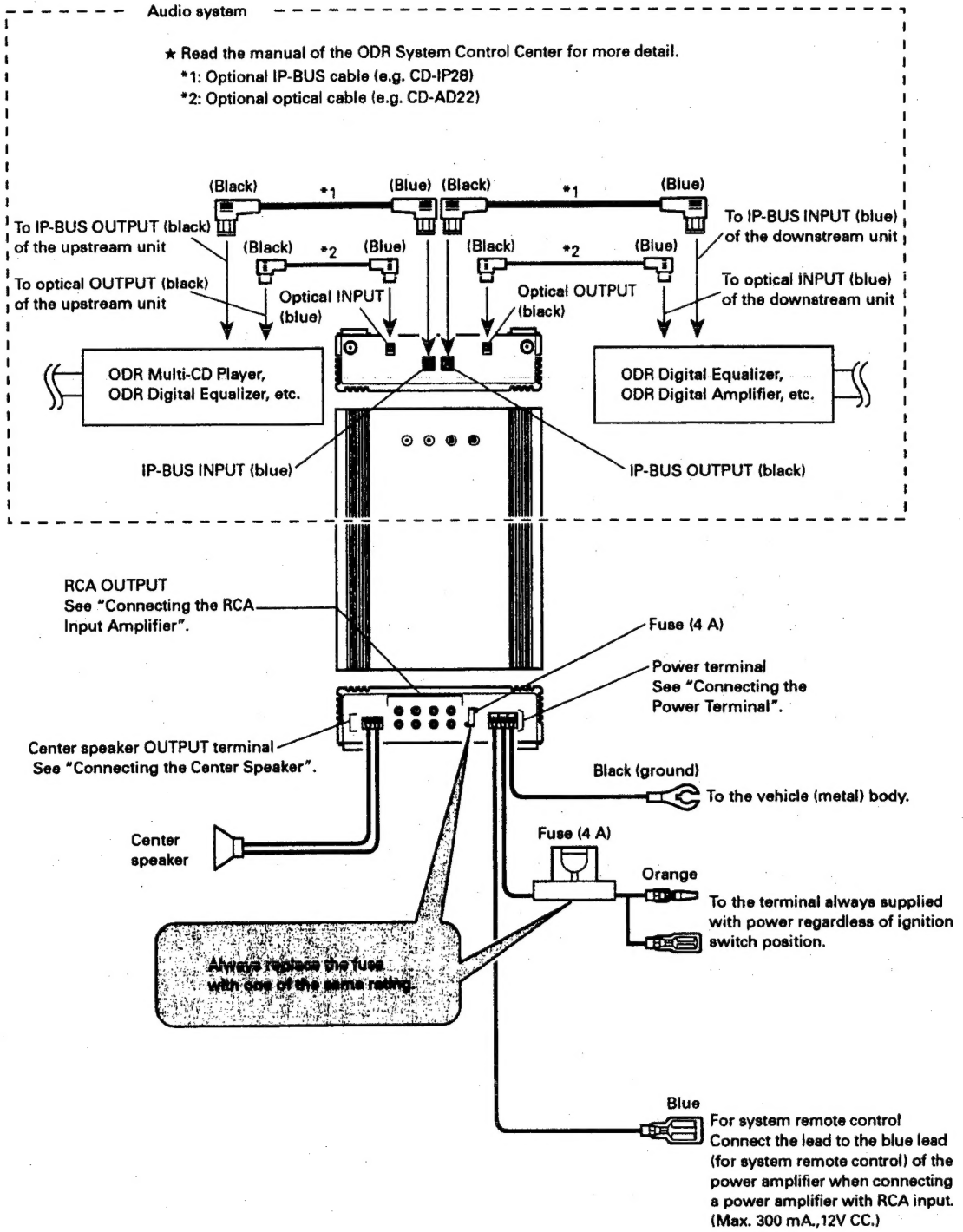
NAC THRU mode
NAC HPF (high-pass filter) mode

Set to this mode when using the unit as NAC (Natural Acoustic Control). Setting is possible only when the unit is assigned as Address 1.
RCA OUTPUT: Outputs center speaker, front, rear and subwoofer audio.
Optical OUTPUT: Outputs front signals.
When the unit is set to NAC THRU, front/rear output will be full range. When the unit is set to NAC HPF, a high-pass filter of 100 Hz will be applied only to front/rear output. Set the unit to NAC HPF when using the subwoofer.

***Audio units**

By definition, audio units are Digital Amplifiers, Digital Equalizer and other audio equipment for the ODR System including the following:
— Dual 1/3 Octave Digital Equalizer [RS-P1]
— Universal Digital Preamp/Equalizer [RS-P50]
— Digital "Pure Class A" Integrated Amplifier [RS-A1]
— Digital "Class A" Integrated Amplifier [RS-A2]

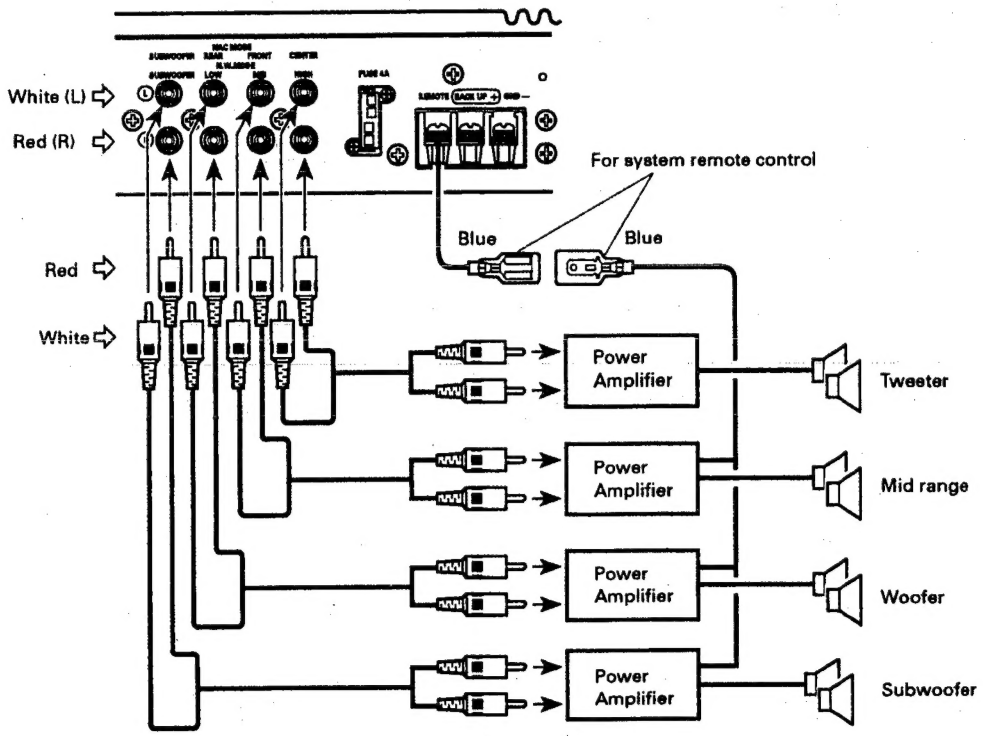
Connection Diagram



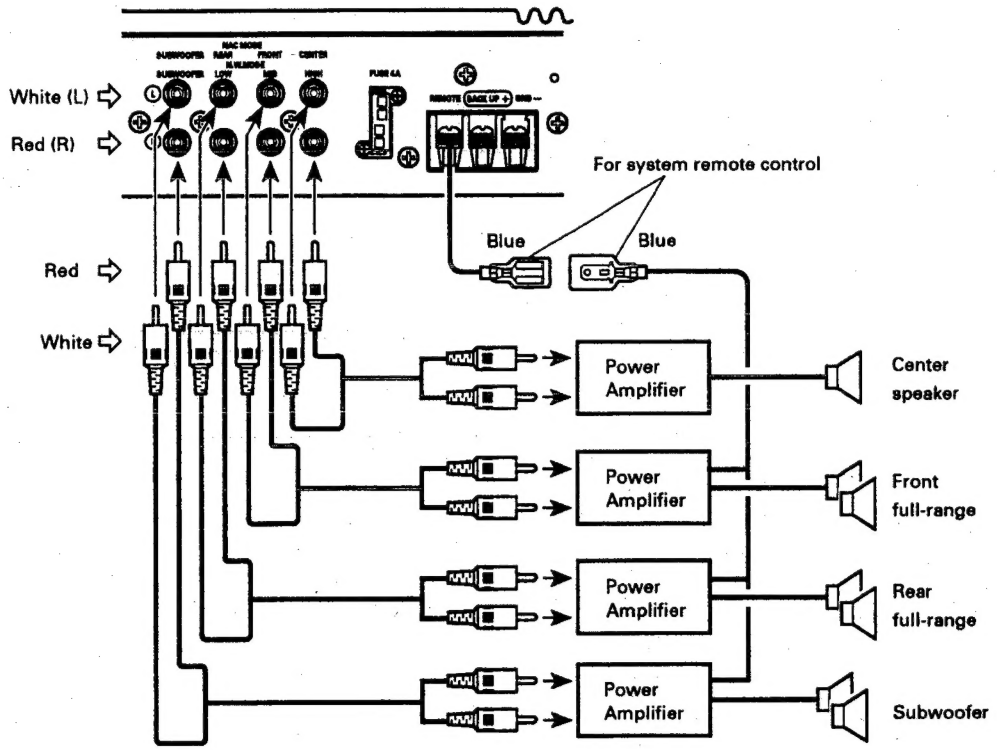
Connecting the RCA Input Amplifier

Connect the RCA Input Power Amplifier according to the purpose of the speaker to be connected to the system.

Network mode (N.W. FRONT/N.W. REAR)

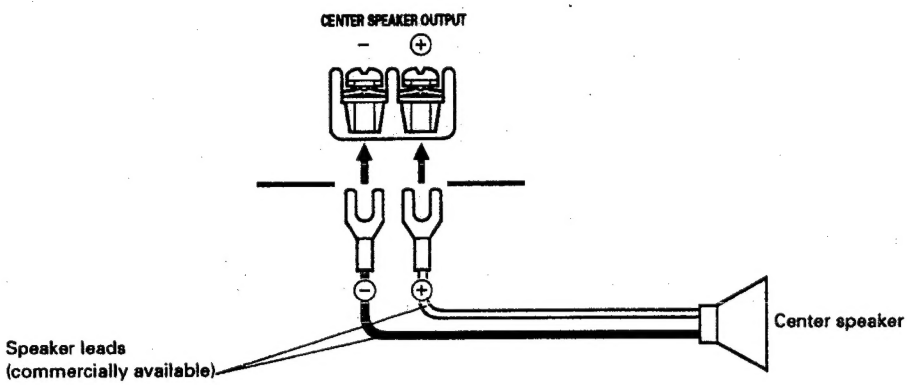


NAC mode (NAC THRU/NAC HPF)



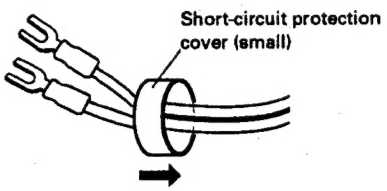
Connecting the Center Speaker

When the equalizer is assigned as Address 1, the center speaker can be connected to the center speaker output terminal.



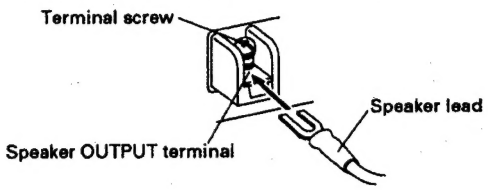
Connecting the speaker terminal

1. **Put the short-circuit protection cover (small) around the speaker leads.**

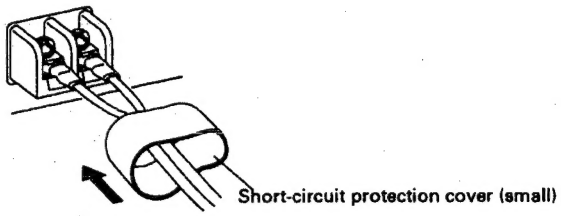


- **Be sure to use this cover to prevent short-circuit.**

2. **Connect the speaker leads to the speaker terminal.**



- **Fasten the speaker leads firmly with terminal screws.**



3. **Cover the entire terminal with the short-circuit protection cover (small).**